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ABSTRACT

Methods of improving the pediatric clerkship are used to develop procedures for educating students in basic science and clinical education programs. The model of instruction first lists the instructional objectives, then defines what the learner knows prior to instruction, plans instructional procedures to supply the missing abilities and skills, and institutes evaluation procedures. Evaluation data can alter the objectives, preassessment, and instructional procedures. Performance requirements are analyzed in this handbook regarding skill in gathering and recording information, competence in defining the patient's problems, judgment on physician intervention and treatment, accepting responsibility for health maintenance, and effectiveness of attitudes toward one's role as a physician. Described are effects of the development of the handbook on faculty attitudes, pediatric instruction, pediatric evaluation, and prerequisite courses. Extensive appendices are included on rating forms, self-instructional units, core seminars, and objectives. (LBH)

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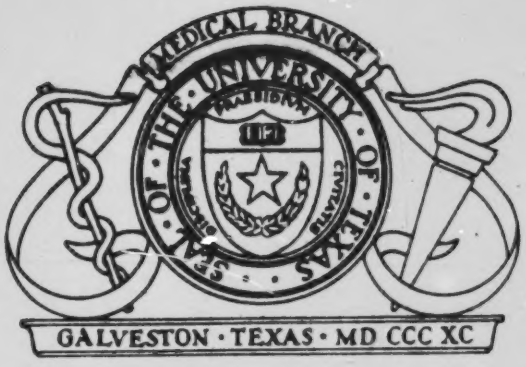

HANDBOOK ON THE DEVELOPMENT OF A SYSTEM OF INSTRUCTION FOR MEDICAL STUDENTS: Using Examples from Pediatric Education

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DEPARTMENT OF PEDIATRICS
and
OFFICE OF RESEARCH IN MEDICAL EDUCATION

THE UNIVERSITY OF TEXAS MEDICAL BRANCH
Galveston, Texas

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FOREWORD

For the past two years, members of the Office of Research in Medical Education and faculty of the Department of Pediatrics, The University of Texas Medical Branch, have been working to improve the pediatric clerkship. This activity has had considerable impact not only upon the procedures followed by the Department in educating medical students, but also on the basic science and clinical education programs at The University of Texas Medical Branch and the methods used for educating and evaluating pediatric house officers locally and nationally. For this reason, we believe that this monograph will be of interest to clinical educators beyond the field of pediatrics and beyond the field of medicine.

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PART I. GENERAL DESCRIPTION OF THE MODEL OF INSTRUCTION

CHAPTER I

INTRODUCTION AND OVERVIEW

Description of the Basic Model

At one time, organizing the clinical instruction of medical students was a relatively simple task. The students observed the clinician by the bedside of the patient. By observation, they were introduced to his skills, and by frequent interaction, they practiced them and eventually achieved mastery. Despite its age and ancient tradition, this system has many excellent features and, today, still survives as the heart of the clinical clerkship and residency. The twentieth century has, however, placed major new demands upon the medical education system which require changes in the process of medical education. Some of the most important changes are:

1) The clinical teaching service in a university hospital is now an exceedingly complex enterprise, employing a variety of physicians, basic scientists, nurses, technicians, etc.

2) Medical school clinical faculty must deal with large numbers of students at a variety of levels of education and experience, while constantly interacting with patients. Furthermore, increased numbers of faculty do not compensate for increased numbers of students since many faculty possess specialized knowledge, e.g., pediatric neurology, which must be shared with all the students.

3) A clinical service in a medical school has multiple objectives including delivery of primary and specialty patient care, education of students and house officers, clinical research, basic science research, and continuing education for practicing physicians.

4) Clinical departments are in the forefront of the utilization of new knowledge. Some methods and procedures become obsolete rapidly. Educators of students and house officers must take into account these changes in theory and practice.

An enterprise as complex as a modern clinical department in a medical school requires an enormous amount of coordination to ensure that the students make effective use of the resources available to them during their contacts with the department. The usual means of coordination of education break down when confronted with great complexity. Therefore, the Department of Pediatrics at The University of Texas Medical Branch has developed a program described in this document to improve the coordination of its educational program for medical students. We believe that portions of this document will be useful to other educators in the health professions.

This document will attempt to accomplish the following goals:

1) to state the objectives of the core curriculum in medical education by listing the tasks each medical student should be able to accomplish at the conclusion of his core basic and clinical science experiences.

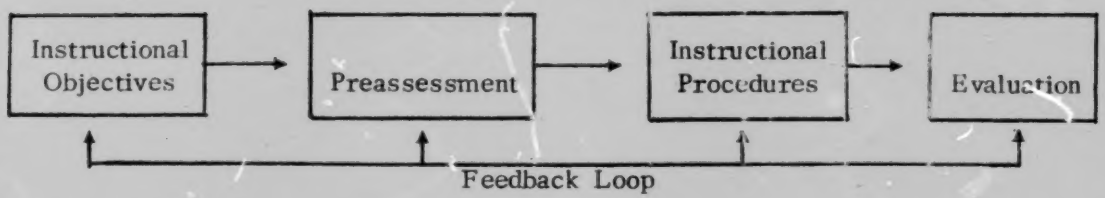
2) to describe the specific objectives of the pediatric core clinical experiences in terms of the tasks that each student will be able to perform in the care of children at the end of his experience in medical school.

3) to analyze the pediatric clerkship learning experiences and evaluation methods in terms of their particular strengths and weaknesses in order to establish guidelines for improvement.

In order to accomplish this goal, a committee consisting of the authors of this handbook adopted a general model of instruction which has been advocated by a number of educators over the past several decades. The model in its simplest form is shown as Figure 1.[1]

Figure 1

GENERAL MODEL OF INSTRUCTION



As the model indicates, the first step in planning instruction is to list the instructional objectives. By instructional objectives is meant a description of how

the learner is going to behave after instruction. For example, in medicine, a typical instructional objective might be "that the learner will be able to take a complete and appropriate history." Following the model, the next step is to define what the learner knows prior to instruction. For example, if one were trying to teach history taking, the instructor might administer a written test to reveal whether the learner knew enough about the history taking procedure and the physiological and psycho-social functioning of human beings to obtain an effective history. Once the amount of prerequisite learning is measured, then instructional procedures can be planned to supply the abilities and skills that the learner has not yet achieved. As a final step, evaluation procedures are instituted to discover if the learner can perform in the fashion described by the objective. As the lines (Figure 1) labeled "Feedback Loop" indicate, evaluation data can alter the objectives, preassessment and instructional procedures. Likewise, experience with instruction may indicate that the objectives are unattainable. The process of education must be seen as a dynamic one in which each of the steps is constantly being altered as data is fed back into the system. Taking this relatively simple model and adapting it to the requirements of a medical education proved to be a formidable task. The results are given in the following chapters. In this chapter, we will try to summarize briefly some of the major decisions that were made and methods used to apply this model to medical education.

The first task, that of outlining the general objectives of medical education in terms of the behavior of the student at the conclusion of his core education involved extensive debate. Fortunately, information on the objectives of medical education was available from the results of empirical studies conducted by Flanagan and his associates. Particularly useful was a study performed on orthopedic surgeons in 1965.[2] In this study, orthopedic surgeons were asked to give incidents of effective or ineffective performance by orthopedists. Blum and Fitzpatrick collected 1,700 of such incidents and classified them into 94 categories of performance which they called the critical performance requirements for orthopedic surgery. These performance requirements are a functional description of the activities which constitute the critical aspects of the profession of orthopedic surgery.

Rather than replicate the orthopedic study, the committee reviewed the results of the study and developed a modification based on their professional judgment. Table 1 lists the six major categories of the critical performance requirements for future physicians as developed by the committee.

The requirements listed in Table 1 (and described in Part II, Table 4, pp. 33-35) have been developed by a small group of individuals representing only one medical specialty. Groups of surgeons or obstetricians might have arrived at a somewhat different list. However, it is our impression that the differences would be neither widespread nor fundamental.

TABLE 1

CRITICAL PERFORMANCE REQUIREMENTS FOR FUTURE PHYSICIANS AT THE END OF THE CORE BASIC AND CLINICAL EXPERIENCES

I. Skill in Gathering and Recording Clinical Information
II. Competence in Defining the Patient's Problems
III. Judgment in Deciding on Appropriate Physician Intervention
IV. Judgment and Skill in Implementing Treatment
V. Accepting Responsibility for Health Maintenance
VI. Effectiveness and Appropriateness of Attitudes toward His Role as a Physician

The second task was that of defining the objectives of a pediatric clerkship. The pediatricians on the committee expressed their frustration in attempting this task since all attempts previously in defining curriculum content ended in disputes among faculty members each arguing the need for medical students to be exposed to various content areas.

The committee eventually became aware that there were two problems preventing them from reaching consensus on objectives.

First, they were unable to agree on the competencies that must be mastered during the clerkship, the competencies that must be demonstrated to the medical students, but not necessarily mastered, and the competencies appropriate as objectives only for advanced (elective) students and house officers. The committee realized that this issue could not be resolved until they developed the objectives of general medical education. Once they had available the description of the competencies required of medical students generally at the end of their core basic and clinical science experiences, they then could analyze these objectives to see which competencies had to be introduced by the pediatric clerkship (e.g., ability to conduct a physical examination of infants and children) and which competencies were greatly reinforced by the clerkship (e.g., ability to communicate with families). Attention to the overall objectives of medical education could provide a beginning set of priorities for the pediatric clerkship which could later be modified by the development and utilization of effective evaluation methods.

The second problem the committee faced was their inability to agree on the amount of factual knowledge which the students must demonstrate at the completion of the clerkship. The committee soon realized that the debate about knowledge was endless and inconclusive. They also realized that some students could remember a much larger number of facts than others, but these differences did not seem to make a comparable difference in performance. Therefore, they decided that this obstacle to agreement could be resolved by writing objectives in terms of performance rather than factual recall. Rather than stating that the student should learn

the following facts about otitis media, the objectives would state that the student should be able to perform some task such as obtain an appropriate history, define problems and institute treatment. This strategy would permit one to develop practical methods for deciding what facts the student needed to know rather than arguing about it. This position also takes into consideration that ability to perform appropriately is a higher order of competency than factual knowledge demonstration.

Adopting these strategies required the committee, first, to develop sets of objectives for future physicians stated in terms of what they had to be able to do at the conclusion of their core learning experiences, the general objectives, and then use these general objectives to develop specific objectives related directly to the student's performance at the conclusion of the pediatric clerkship. Thus, a general objective might be "to be able to obtain an appropriate history," and a specific objective for pediatrics would be "to be able to obtain an appropriate history regarding a child's illness from his family." Furthermore, those objectives had to be described in terms of specific observable behavior directly related to some task required of the physician.

The third task was to examine each performance requirement according to the model in Figure 1 as modified to take into account the specific conditions of medical education. The following chapter presents an extended example of how this analysis has proceeded, but it may be worthwhile at this point to summarize the process.

The first performance requirement is I-A, Ability to Obtain an Adequate and Appropriate History from a Patient. The committee decided that basic science core and the Introduction to Clinical Medicine courses provided such prerequisites to this competency as "knowledge and understanding of the mechanisms of pathophysiology." Therefore, the pediatric clerkship had to build upon abilities acquired earlier by providing the ability to obtain historical information from children and families.

The committee then analyzed the existing clerkship to see if its organization led to accomplishment of this objective. They found, for example, that the student was given some didactic information regarding the disease entities prominent in children and considerable opportunity to interview children and families. Furthermore, students received a great deal of instruction assisting them to understand disease mechanisms in children, but the attention given to the process of interviewing children and families was less than satisfactory. As a consequence, the amount of formal and informal evaluation of the students' interviewing ability was inadequate.

Each of the performance requirements in Table 1 has been analyzed in this fashion in considerable detail. As the analysis has proceeded, the faculty has gained new insights into the value of some existing methods and the inadequacy of others. This in turn has led to the introduction of new methods of teaching and evaluation, including self-instructional materials, examinations which are scored on

the basis of objectives attained rather than rank in class or percentage correct, student reaction forms, and written and oral simulation exercises in the practice of medicine. Although much has been done, much remains to be done. The introduction of changes in educational methods has been systematically planned and designed to make maximum use of the department's resources. Each innovation has been and will continue to be carefully evaluated, and any procedure, new or old, that does not function effectively will be modified or eliminated.

The planning of an organized, systematic approach to curriculum innovation would have been impossible without the development of written guidelines. These facilitate the establishment of priorities and provide a reference point for discussing and evaluating educational methods. Requests from groups interested in curriculum revision and the need to provide organized explanations of this approach to medical education for our own faculty have encouraged us to assemble these guidelines into this handbook. Although the basic principles of the organized approach to the planning and conduct of education described in this handbook are broadly applicable and unlikely to become obsolete, some of the specific analyses will become outdated as time passes and as evaluation data reveals which educational procedures are most effective. It is assumed, therefore, that it will be revised from time to time.

Organization and Utilization of the Handbook

This handbook is in three parts. Part I is an explanation of the process, Part II is a description of the findings of our analyses, and Part III is a discussion of the impact of the analyses on current instructional practices. Part I, Chapter I, serves as an introduction and explanation of the purposes and methodology of the handbook. Part I, Chapter II, is a detailed discussion of the system described in Figure 1 modified for use in medical education. Part I, Chapter III, contains a discussion of some concepts used in developing learning experiences in medical education. Chapter IV contains a similar analysis of evaluation procedures

Part II is a detailed analysis of each of the performance requirements developed by the committee. It is divided into six chapters, each of which are based upon one major category of performance requirements listed in Table 1. It is assumed throughout Part II that the reader has studied the general comments regarding education and evaluation included in Part I.

Part III of the handbook describes the effects of these objectives and guidelines on the process of education being conducted in the Department of Pediatrics and other groups at The University of Texas Medical Branch. In addition, a series of appendices are included in the handbook which contain some examples of materials developed as a consequence of the analytical process.

The handbook is not designed to be read from cover to cover like a novel. Various readers may use selected sections of the handbook in their activities. Those interested in designing a clerkship curriculum should carefully read Part I (pp. 1-30) with especial attention to Figures 1 and 2 (pp. 2 and 12) and Tables 1 and 4 (pp. 4 and 33-35). The concluding remarks in each of the chapters in Part II should also be read carefully, and the other sections of the handbook can be scanned or carefully reviewed depending on the reader's specific interests. If a reader is responsible for teaching or evaluating a particular performance area (e.g., history taking), then he should read the chapter that discussed that area about which he is concerned, and the specific objectives listed under the performance requirement. Those constructing evaluation instruments should first consult Table 4 (pp. 33-35) to determine what area of competence is being covered by their evaluations. Many hints on the construction of such instruments can be obtained from reviewing the specific objectives in the appropriate sections of Part II. The discussion in Part III and the specific examples in the appendices should also be valuable for many readers.

CHAPTER II

ELABORATION OF MODEL OF INSTRUCTION FOR MEDICAL EDUCATION

Some Definitions

The relatively simple model described in Figure 1 has been expanded to meet the needs of a complicated profession such as medicine. In addition, it is necessary at this point to define more rigorously some of the concepts that are used in developing and utilizing the model. In Chapter I, we described how the list of "performance requirements" was developed and how, in general, such requirements can be used in planning instruction. Below, we would like to describe, in more detail, the links between what we want the students to learn, the objectives, and what we, as teachers, must do in order to help students learn.

The term "performance requirement" is ultimately a description of a task that a person must perform. Most tasks are too complex to be learned as a whole. Therefore, it is necessary to break the tasks down into their component parts, each of which may be amenable to educational efforts. One method of breaking down and analyzing the tasks that physicians perform is to look upon the physician's job as consisting of a number of roles. Each of the roles can be defined as one of the performance requirements in Table 1. Medical teachers then attempt to develop in their students the abilities required to perform these roles. We are not so much interested in the students' knowledge per se; we want to know what they can do with their knowledge. Therefore, in specifying what we expect students to learn, we write ability statements which consist of either 1) an emotional process such as "empathizing" or "willing," or 2) a mental process such as "knowing" or "understanding," or 3) a physical process such as "skill." To this, we add the description of performing some role such as "gathering information," "injecting a drug," or "counseling a mother." Educational objectives are defined, therefore, as statements including a description of an ability and a specific role (see Table 2).

The number of possible specific educational objectives in medicine is quite large. For this reason, procedures have been adopted to simplify the task. Specific objectives can be summarized in the form of a grid with roles on one axis and abilities on the other. An illustration of such a grid is given in Table 2 (p. 9).

TABLE 2

SOME EXAMPLES OF SPECIFIC OBJECTIVES IN THE EDUCATION TO PHYSICIANS

ABILITY OF THE PHYSICIAN	ROLES OF PHYSICIANS					
	I Information Gathering	II Defining Problems	III Deciding on Intervention	IV Implementing Treatment	V Health Maintenance	VI Professional Responsibility
1) Attitudes	Sensitivity to patient's reactions in history taking	Avoidance of personal biases and preconceived ideas	Willing to limit activities to those which experience and education permit	Reluctant to initiate treatment of uncertain or limited therapeutic value	Willing to adopt health maintenance procedures in his practice or institution	Willing to feel genuine concern for patient as human being
2) Knowledge and Understanding	Understanding the results of a developmental evaluation	Able to develop hypotheses based on available data	Knowledge of relative stability or tolerance of an organ system to adverse conditions.	Know available invasive techniques and most opportune time for their introduction	Know those diseases and conditions in which screening procedures are helpful and the age and population groups most likely to benefit	Know human reactions to illness and death, and the effects of age, sex, ethnic origin and socio-economic status on these reactions
3) Psychomotor and Interpersonal	Being able to obtain a sputum specimen for lab testing	To discuss patient's problems in logical sequence with colleagues	Be able to make immediate assessment of life or death	Be able to obtain hemostasis in lacerations and abrasions	Be able to apply and interpret tuberculin and fungal skin tests	Be skilled at communicating with patients and families during illness and death

Much of the content of this handbook is based upon the expansion of each of the cells of this grid. It is possible to expand such a grid to an almost infinite amount of detail by developing a number of subcategories on the ability axis and dividing each role into a number of component parts. All abilities are the result of the accumulation of various simple abilities into organized systems of behavior. Thus, a student who is capable of determining the size of a patient's liver by physical examination has demonstrated that he has the ability to approach patients, that he has knowledge of abdominal anatomy, and that he has skill in the technique of palpating through the abdominal wall. Those who prepare progress examinations in the basic science courses or observe students in their ward rounds during the clinical years will often find it necessary and helpful to specify the subcategories of abilities and roles that should be assessed. Though such detail is essential to the planning of specific student instructional experiences, it is unnecessary in this handbook. The purpose of the handbook is to alert the teacher as to what to teach and evaluate, not specify each detail that the student must master.

In order to provide some detailed objectives without making the handbook overly long, we have attempted to list some of the interpersonal and technical skills that the student must master and, in some of the appendices, indicate techniques and inquiries that must be mastered in gathering information. The objectives for basic science courses such as Pathology also provide some of the detail that this handbook lacks.[3] Part III describes some of the judgments that The University of Texas Medical Branch pediatric faculty have made regarding "core" problems for pediatric students.

The reader may be puzzled as to why we have defined abilities in three subtypes, namely: Attitudes, Knowledge and Understanding, and Skills. This is an adaptation of the terms common to educational psychologists of affective, cognitive and psychomotor processes. These three types of abilities are arbitrary and could be expanded into many more. Furthermore, they are somewhat artificial since most performance will involve all three types of behavior.

Objectives are broken into the three types listed here because the educational activity required to remedy deficiencies may be different depending on the nature of the students' abilities. Suppose it is discovered that a particular student is deficient in history taking ability. This deficiency is indicated by the fact that the student does not obtain the amount of information from patients that a house officer can obtain. In some cases, it may be because the student has a poor attitude. Subconsciously, he does not want to be a physician so he does his work poorly. He terminates his patient interview before he has obtained the optimum amount of information. Other attitudinal deficiencies may have nothing to do with his work habits, but may relate to his emotional responses. He may be frightened of patients and, therefore, eager to terminate his patient interviews. The student possessing the first set of attitudes might best profit from a confrontation with faculty regarding his desire to be a physician. The second student would probably benefit most from supervised practice. As the latter student becomes familiar with the role of

interviewer, he would probably relax and become much more effective.

Students can also fail because they possess weak cognitive ability - deficiencies in knowledge and understanding. One student may never have learned that diabetes is related to genetic factors and thus never explore a family history of diabetes in a susceptible patient presenting with a history of persistent infection. It may be that a student is well versed in medical knowledge but lacks knowledge of how to question a patient. He might say, "You had pain in your left arm, didn't you?" instead of saying "Describe the pain the best you can." Finally, he may be able to gather information but not utilize it to recognize patterns which indicate fruitful hypotheses. He may obtain a history of "colds" in the fall which disappear each winter but never explore the possibility of allergy. Each type of educational deficit will require a different educational remedy. The first student may need more study of basic science, the second, more study of interview theory, and the third, practice in solving clinical problems.

The third type of objective, psychomotor and interpersonal skills, can be analyzed in a similar fashion. Students who are dedicated to medicine as a career and are knowledgeable about disease, may fail because they lack the technical skill of talking to people.

Description of the Medical Education Model of Instruction

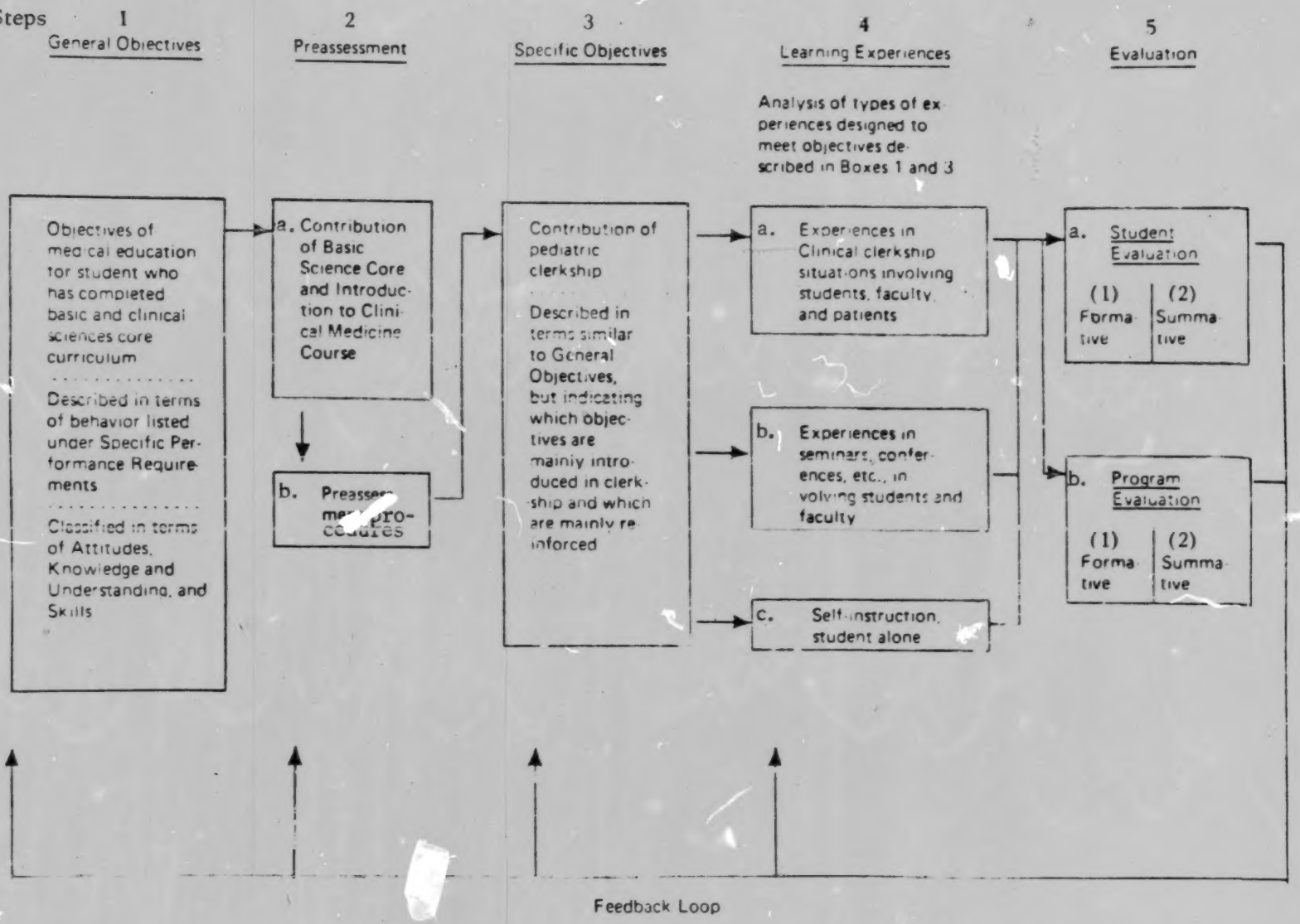
The simple model in Figure 1 has been expanded for use by the Department of Pediatrics in developing its guidelines for instruction. This expanded model is illustrated in Figure 2 (p. 12).[4] Note that each of the steps in the process has been given a number. Below is a brief discussion of each step in the model illustrated by references to Performance Requirement I-A-1 (Table 1), Ability to Elicit a Thorough and Appropriate History from the Patient and Other Sources. Detailed discussions of learning experiences and evaluation are included in Part I, Chapters III and IV.

Step 1 is the development of the General Objectives of Medical Education. In this handbook, these objectives have been keyed to each of the performance requirements. They are the behaviors required to complete the role described by the performance requirement. They are made up of abilities plus some description of a role (see Table 2, Chapter II) and divided into attitudes, knowledge and understanding, and skills. Table 3 (p. 13) lists some of the objectives included under Performance Requirement I-A (Table 1).

After the general objectives have been developed, Step 2 is Preassessment which has two substeps: 2-a, the defining of the Contribution of the Previous Learning Experiences to the accomplishment of the general objectives, and 2-b, the Preassessment Procedures. The committee has used its knowledge of the curriculum at The University of Texas Medical Branch to define what subjects have probably contributed to the attainment of the general objectives under each performance

Figure 2

MODEL OF INSTRUCTION FOR DEVELOPING PEDIATRIC CLERKSHIP


Steps
1
General Objectives
2
Preassessment
3
Specific Objectives
4
Learning Experiences
5
Evaluation
Analysis of types of experiences designed to meet objectives described in Boxes 1 and 3
Objectives of medical education for student who has completed basic and clinical sciences core curriculum
Described in terms of behavior listed under Specific Performance Requirements
Classified in terms of Attitudes, Knowledge and Understanding, and Skills
a. Contribution of Basic Science Core and Introduction to Clinical Medicine Course
b. Preassessment procedures
Contribution of pediatric clerkship
Described in terms similar to General Objectives, but indicating which objectives are mainly introduced in clerkship and which are mainly reinforced
a. Experiences in Clinical clerkship situations involving students, faculty and patients
b. Experiences in seminars, conferences, etc., involving students and faculty
c. Self-instruction, student alone
a. Student Evaluation
(1) Formative
(2) Summative
b. Program Evaluation
(1) Formative
(2) Summative
Feedback Loop

requirement. For example, in regard to Requirement I-A, Effective History Taking, the committee indicated that attitudes and skills regarding history taking were introduced during the first year in the Introduction to Patient Evaluation course and during the Introduction to Clinical Medicine course which is given at the conclusion of core basic science learning experiences.

TABLE 3

ABBREVIATED VERSION OF THE GENERAL OBJECTIVES FOR PERFORMANCE REQUIREMENT I-A - OBTAINING ADEQUATE AND APPROPRIATE HISTORICAL INFORMATION FROM THE PATIENT AND OTHER SOURCES

I. Attitude, e.g.

The physician should be willing to undertake repeated examinations in order to obtain an appropriate and complete history.

II. Knowledge and Understanding, e.g.,

The physician should possess knowledge and understanding of the mechanisms of pathophysiology and the influence of the psychosocial environment on function so as to relate observed data to specific diseases.

III. Skills, e.g.,

The physician must be able to establish rapport with the patient so as to facilitate treatment, education and counseling.

The Pathology, Introduction to Patient Evaluation and Introduction to Clinical Medicine courses are the main source of the knowledge and understanding required to ask appropriate questions regarding common initial complaints.

While Step 2 is a list of expectations, Step 2-b, Preassessment Procedures, is a method of gathering evidence to see if those expectations have been met. This can be done either by formal examination or by having members of the department actively participate in the prerequisite courses (see Part III).

The next step in the model is 3, Developing Specific Objectives. These objectives are developed by the department based upon the general objectives of the medical school, the resources available to the department and the results of preassessment procedures. These specific objectives are of two types. One is the introduction of abilities that are not covered by other learning experiences in the

curriculum. In regard to history taking, the pediatric clerkship is the main learning experience during the clinical years where students will be given specific instruction regarding the historical questions that must be asked to gain insight as to whether or not the child is developing normally, the historical manifestations of congenital and genetic defects, and specific techniques for gathering historical information from families and children.

The other type of objective is one which, while not necessarily the sole province of pediatrics, is especially well reinforced during this clerkship. Because of the large number of ambulatory patients seen in the pediatric clerkship, the clerkship provides an excellent opportunity to reinforce the basic skills of talking to people, a skill which is required in developing history taking ability.

Step 4 involves the Planning of Learning Experiences to reach the specific objectives delineated in Step 3. In analyzing the clerkship learning experiences, it became evident that there are essentially three types of learning experiences in medical education.

These types are described under Steps 4-a, 4-b and 4-c in Figure 2. They are:

1) Practice in Clinical Clerkship Situations involving students, faculty and patients (Step 4-a).

2) Conferences or Classes, both formal and informal, involving faculty and students (Step 4-b).

3) Student Self-Study from books, instructional packages, films, television, etc., which require only the involvement of the student plus some form of instructional medium (Step 4-c).

It is possible to categorize instructional activities in other ways such as formal or informal, but these three categories seem particularly useful because they relate to the cost-effectiveness of medical education and to hospital staffing patterns.

Practice in Clinical Situations is the most realistic type of learning experience, and the type most apt to have the greatest impact on student skills and attitudes. It is, however, most structured by events and least amenable to tailoring to each student's needs, interest and time. Conferences and Classes are less fixed and structured by events than practical experiences, but still demand considerable faculty effort. As the commitment of faculty time is increased, the effect on the student's attitudes and skills is increased but so is cost. Self-Instruction is most flexible, most easily adapted to the student's needs, and least expensive. This is the major method by which students develop cognitive abilities. Unfortunately, this method is relatively ineffective in influencing the students' skills and attitudes.

Given the strengths and weaknesses of each technique, it is evident that a blending of all three is required to produce a maximally effective educational program. In mastering history taking, it is evident that the student must practice the appropriate behaviors in clerkship situations, but must learn the technique and facts required from formal instruction and self-study. A more elaborate analyses of the basic characteristics of all learning experiences is given in the last chapter in Part I.

Step 5 in the model is Evaluation. It is somewhat artificial to separate Evaluation from the discussion of learning experiences since evaluation methods are one of the chief ways to facilitate learning. However, evaluation strategies, at times, differ so substantially from the activities discussed under learning experiences that a separate discussion is essential.

Evaluation is broken into two large categories: Evaluation of Students and Evaluation of Programs. Step 5-a, the first category, is the Evaluation of Students to see if they, in fact, are able to perform the behaviors described in the objective. Student evaluation is further divided into 5-a (1) Formative Student Evaluation, or on-going evaluation of the student as he progresses through the learning experiences, and 5-a (2) Summative Student Evaluation, or evaluation at the end of the learning experience. In regard to history taking, formative evaluation occurs during the interaction between faculty and students especially in the out-patient clinic during the clerkship. Summative evaluation might consist of an observation of the student obtaining a history from either an actual or simulated patient during the last week of the clerkship.

The second category, 5-b (1) Formative Program Evaluation, refers to on-going analysis of the effectiveness of the program, and Step 5-b (2) Summative Program Evaluation, refers to evaluation of the program after the students have completed it. In regard to history taking, analysis of the number of available patients, and amount of supervision of patient contact by faculty while the clerkship is being conducted is an example of Formative Program Evaluation. An analysis of performance of all the students on formal evaluation procedures and student feedback as to their feelings regarding their experiences in interacting with patients would be considered part of the Summative Program Evaluation. A detailed discussion of evaluation is included in Part II, Chapter IV.

This model has been used to analyze the entire curriculum of the pediatric clerkship. Details of the analyses (Part II) and the Department's reaction to it (Part III) will be presented in the next chapter.

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CHAPTER III

GENERALIZATIONS REGARDING LEARNING EXPERIENCES

The model of instruction discussed here requires that each role performed by the physician be analyzed in terms of the learning experiences required to educate the students to perform that role and the evaluation methods used to find out whether or not the student has succeeded. Obviously, many of the learning experiences and evaluation methods used apply to a variety of roles. It would be redundant to repeat the same comments each time regarding a number of learning experiences. For this reason, we have assembled some generalizations regarding evaluation in Chapter IV. The analyses have been organized by each of the steps in the model of instruction given in Figure 2. As in Chapter II, references to history taking are used as examples in this discussion.

Some Comments Regarding Learning of Attitudes

Before proceeding to the discussion of each step in the model, we would like to present some comments on the students' attitudes. Most medical educators are aware of the importance of attitudinal learning but are somewhat perplexed about how to facilitate the development of appropriate attitudes.

Most of the behavior that schools attempt to encourage in students is approached through the intellect. The desired behavior is presented in written and oral form, and the student strives to reproduce the behavior. When the student's performance of the intellectual task is similar to the teachers, both teacher and student are satisfied. However, such a congruence between the teacher and the student's ability to perform some task (e.g., obtain a history) is no guarantee that the student will perform in the future as expected. Developing the student's willingness to perform in the future is a separate manifestation of performance which requires different educational techniques.

Virtually all students come to their learning experiences possessing some basic attitudes. These include:

1) Desire to achieve competence as defined by their instructors.

2) Desire to achieve recognition and support from their peers and instructors.

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Therefore, the main method of influencing attitudes is to define to the students what the instructor considers effective behavior and to utilize rewards, lack of rewards and punishments (which psychologists call reinforcers) to arouse in the students the desire to perform as indicated.

To be effective, such methods must 1) gain the student's attention, 2) clearly define the behavior that the student should manifest and 3) arrange for appropriate reinforcements. Teachers often use oral presentations, i.e., lectures and seminars, to develop attitudes. Often these methods are deficient in that they do not get the attention of the student by the use of such methods as visual aids, questions, active involvement, etc., do not clearly describe the behavior to be shown by the students and provide little opportunity for reinforcement because the student is not required to demonstrate the required behavior and receive feedback.

The lecture format, therefore, cannot be the most effective method of changing or developing attitudes. Psychologists have discovered that the most effective method of altering attitudes is role modeling. In role modeling, the learner observes appropriate models (e.g., house officers, faculty) and, under optimum conditions, he tries out these behaviors. If his behavior is rewarded in some fashion (e.g., nods of approval, patient compliance) he will perform the role more frequently. Eventually the learner internalizes the modeled behaviors.

There are four critical stages which affect the learning of attitudes through modeling: 1) the adoption of a role model, 2) the likelihood that the individual will model, i.e., "tryout," or experiment with the behavior, 3) the consequences (rewards or punishments) of modeling the behavior, and 4) the eventual internalization of the behavior into the habit pattern of the individual. Some details regarding these stages and their application to the clinical clerkship are discussed below.

1. Adoption of Role Model

Role models are selected from those available. For junior medical students they are: faculty, house officers or peers. Two conditions affecting choice of role models are: 1) the model possesses characteristics or things which the individual wishes to have - social power, privilege, respect, social or academic rewards, and 2) the model possesses sufficient similarity to encourage identification.

The degree of similarity is often an important factor in affecting the choice of a model. Primarily due to this similarity factor, the near peer (senior student or junior house officer - an individual somewhat further advanced in the socialization process) may be a particularly effective model. The senior or house officer is similar to the junior student, but also has obtained some of the privileges of the established group member. For this reason, the junior student may be more influenced by the senior or house officer than by a faculty member. Sometimes, however, this "near peer" may model behavior which is not considered "appropriate"

by the faculty and house officers. Very often, the characteristics which the junior student models are those for which he observes his peers or near peers receiving rewards. The house officer or student who is praised by a respected faculty member or senior may soon become a model. Likewise, those who are punished or reprimanded are not likely to serve as role models.

2. Likelihood that the Individual will Model or Try Out the Behavior

Given an appropriate role model, the student must be given an opportunity for trying out the behavior through role playing. There are a number of environmental characteristics necessary if an individual is to experiment with a role model.

a) An attitude of experimentation must be present in his environment. Certainly, absence of punishment for experimenting with new roles would be a necessary component of the environment.

b) Students must see others (i.e., peers and house officers) rewarded for displaying appropriate attitudes.

c) Students must have an opportunity to experiment with the role behaviors.

3. The Consequences (Rewards or Punishments) of Modeling the Behavior

Once appropriate behavior occurs, there must be positive consequences if it is to occur again in the future. The students' behavior must be noticed and then appropriately rewarded. In most clerkships, insufficient attention has been directed toward determining the students' actual behavior and ensuring that positive consequences follow the appropriate behavior.

4. Internalization of the Behavior

Some research has indicated that many of the value changes which occur as a result of attending educational institutions are short-lived. Once individuals leave an environment where they learned new attitudes and values, they may revert back to their prior values.

Several factors influence the persistence of a value change: 1) individuals who have made sacrifices in order to maintain a value (without rewards) are likely to continue to make similar sacrifices. Their sacrifices produce an emotional investment in the pattern of behavior. 2) Individuals who learn to seek out other individuals or organizations likely to reward them for their values are likely to

continue this practice thereby maintaining their values. At the clerkship level, there is little that can be done to ensure that values are internalized. Emphasis should be placed on providing appropriate role models, giving students opportunities to model the behavior and providing rewards for appropriate behavior. House officer education should focus on the internalization of the value and attitude changes.

These concepts regarding attitudinal learning should assist the reader in understanding some of the statements regarding the strengths and weaknesses of each technique given in the sections below.

Characteristics of Clinical Situations Involving Patients, Students and Faculty (Step 4-a)

The various learning experiences included during the clerkship, i.e., initial patient interviews, ward rounds, etc., are designed to provide realistic situations on a one-to-one basis with students, patients, house officers and faculty.

The main strength of these situations is their reality. Furthermore, the intimate personal contact among students, patients, house officers and faculty has a strong emotional impact on the student's attitudes and skills, especially those required in examining patients and communicating in both verbal and nonverbal fashion.

The advantages of these learning experiences should not blind us to their weaknesses which are listed below.

1) Much of the impact of the clerkship requires the student to interact with patients. He interviews them initially and during follow-up visits, he examines them, gives them instructions, and performs certain therapeutic tasks. Optimum learning requires that the student obtain specific feedback on the effectiveness of each aspect of his performance. Some of this feedback comes from the patient in the form of immediate reactions, both verbal and nonverbal. This feedback may be misleading in that it is often influenced more by the patient's inner feelings than the actions of the student. Although the ideal situation would have a faculty member present during the interactions and provide the opportunity to discuss the interaction afterwards, the scarcity of faculty time and the need to safeguard the sensitive physician-patient relationship makes this ideal difficult to achieve. Furthermore, even when a faculty member or a house officer is present, feedback can be absent or inappropriate. Faculty or house officers may only discuss the questions that the student failed to ask during the history, the procedures he failed to perform during the physical and the laboratory tests he failed to order, and pay little attention to the student's deficiencies in approaching the patient, or his inability to analyze the data he has obtained.

The problem of providing opportunities for the student to see effective interactions with patients demonstrated and to receive pertinent feedback can be partially relieved by having the student alternate with faculty and house officers in conducting patient interactions. Videotape has great possibilities for alleviating this problem. Faculty can use videotape to demonstrate effective procedures in classic types of cases. Videotaping of students can provide the opportunity for faculty to review student performance at their convenience. Students can view their own performance and that of fellow students. Faculty feedback on one student's performance can serve to educate large numbers of students. Further methods of improving student feedback would be to analyze the characteristics of effective patient interactions and feedback to students with facuity in faculty workshops, provide feedback to faculty from students, and provide opportunities for the faculty to assess their own performance by means of observation of videotapes.

2) Patient contact experiences depend on the availability of patients. Sometimes, the type of patient and patient problems are not sufficient to provide the most desirable organized learning required of students, especially when a clerkship is relatively short or patient population scanty. When this situation exists, it is necessary to supplement patient interactions with organized learning experiences which have some of the same characteristics as those situations involving actual patients (e.g., analyses of charts or use of simulated or videotaped patients). On the other hand, there may be too many patients to provide adequate monitoring of students by available faculty.

3) Experiences involving patient contact with students on a one-to-one basis take a great deal of faculty time. Suggested improvements in the clinical clerkship must take into account the limited amount of faculty time available. One way of saving time is to delegate instructional duties to house officers, non-physicians and students themselves (e.g., one-way glass or videotaped observation of a student interviewing a patient while fellow students watch and review the encounter with criteria jointly developed by faculty and students).

Much faculty time can also be saved by using books, handouts, videotapes, slide-tape demonstrations and self-instructional materials as substitutes for the hours of physician time devoted to demonstrating techniques or lecturing to small numbers of students. The development of a system which conserves physician time and makes maximum use of both house officers', students' and non-physicians' learning media in instruction requires much planning and organization, and appropriate education and motivation of students and house officers. The Department of Pediatrics has made great efforts to move toward a system which conserves physician time by the use of better organized learning experiences and self-instructional packages, which is discussed in Part III of this handbook.

Rounds, Conferences, Seminars, Classes, etc., both Formal and Informal, involving Faculty and Students (Step 4-b)

As was indicated in the previous section, it is not feasible to attempt to reach all of the objectives of medical education in clinical situations. It is, therefore, necessary to conduct learning experiences which may require extensive faculty planning and effort, but which are not limited by the availability of patients.

The particular strengths of these types of experiences are the following:

1) They may be organized to meet program-student needs (e.g., x-ray conferences on pneumonia in the summer when such cases are uncommon).

2) Genuine learning first requires that the student be challenged by an actual patient problem. His understanding of the problem is deepened, however, by discussion with faculty and fellow students away from the bedside.

3) Such experiences have great flexibility since they can be either formal or informal, preplanned or extemporaneous, depending on the learning needs of the students and the limitations of time and scheduling. The type of problems available for discussion in clinical medicine (plus the relatively small size of the student group) provide an outstanding setting and situation for developing effective models for clinical problem solving.

4) The opportunity exists to place the responsibility on the student to obtain material himself and make presentations to develop his peers under faculty direction. Such experiences aid the student's ability to learn on his own.

While these advantages are impressive, there are some weaknesses of this type of learning experience as well. Some of these weaknesses and methods to alleviate them are discussed below.

1) Group teaching as opposed to one-to-one student-faculty relationship, usually is less strongly motivating and, therefore, leads to less student preparation and follow-up study. Furthermore, group teaching limits the opportunity to individualize instruction. These problems can be alleviated by giving specific student assignments, defining objectives clearly, and by organizing instruction to ensure active student involvement during each session. The faculty must learn to do this.

2) Effective teaching, especially as the number of students per faculty member rises, places great demands on the teaching abilities of

faculty. Inservice workshops for faculty and house officers on principles of education may alleviate this problem.

3) Lack of opportunity for direct patient involvement and interaction makes it difficult to reach some of the skill and attitudinal objectives of medical education through these types of learning experiences.

   One method of alleviating this problem is to emphasize and clearly define to the faculty that faculty must concentrate their energies on improving the student's skills, attitudes and problem solving abilities, and to encourage the student to make frequent use of self-instructional methods to increase the knowledge base.

4) Conferences and classroom instruction often seem to over-emphasize the basic knowledges and understandings required as prerequisites to interactions with patients rather than the abilities required to manage the patient's problems. One method of alleviating this problem is to focus on real solutions to real cases during the group activities. Also, see the discussion regarding patient contact experiences above.

In regard to the teaching of history taking, all of the department-wide seminars, as well as grand rounds, x-ray conferences, discharge and death conferences, etc., deal with improving the student's abilities as an information gatherer since they assist the student to understand normal and abnormal functioning. The conference activities now being conducted do not deal with the process of medical interviewing, but only with the factual information needed in dealing with various types of patient problems. Formal sessions on interviewing per se are now being conducted as part of the Introduction to Patient Evaluation course. The faculty is considering the desirability of formal sessions on interviewing in pediatrics as well in order to assist the students in mastering particular techniques required in interacting with children and parents.

Student Self-Study from Books, Films, Television, Self-Instructional Units, etc., which Require Only the Involvement of a Student Plus Instructional Media (Step 4-c)

Learning experiences which demand large amounts of patient and faculty time will always be expensive and inflexible in use. Self-instructional materials, especially those which are carefully planned, structured and organized by knowledgeable faculty, can be used by the students at their convenience, and can be tailored to the individual student's needs and interests. Such materials can be adapted to provide rapid feedback to the student. It is relatively easy to improve their effectiveness by gathering evaluation data and applying creative revisions in the portion of the material that causes students' difficulty. They can minimize the need

for fixed repetitive faculty obligations and, therefore, have the potential, in the long run, of being considerably more economical than other types of learning experiences. Finally, inclusion of well developed, self-instructional materials in a curriculum can initiate and reinforce the development of appropriate attitudes in students for maintaining their expertise at the conclusion of their formal learning period, and provide a model for carrying out such self-learning activity. This technique also has its weaknesses. Some of these weaknesses and methods of alleviating them are discussed below.

1) The development of effective self-instructional methods requires substantial educational expertise on the part of the faculty. This deficiency can be alleviated by training sessions on such topics as the development of simulation exercises (patient-management problems), filmed interviews and self-instructional texts. Experience has shown that faculty respond readily when given some good guidelines for developing such materials and the opportunity for consulting regularly with educational psychologists and editors. The Department of Pediatrics faculty has been able to develop a substantial number of self-instructional packages in a relatively brief time (see Part III).

2) Students vary a great deal in their ability to learn from various learning formats; therefore, it is desirable to develop self-learning materials in a variety of formats.

3) The development of self-instructional materials can require excessive expenditures of faculty time. This problem can never be solved, but it can be alleviated by developing standard formats, conducting training sessions, utilizing materials from other institutions, and designating certain individuals who seem skilled at this procedure to set aside blocks of time for initial development of materials. Most faculty can be used for review and refinement.

4) Self-instruction can often become boring and tedious due to lack of interaction with fellow human beings. This problem can be alleviated by coordinating self-instructional activities with the student-faculty interactions described earlier, and some self-instructional activity can be organized to be carried out with groups of students which would allow development of peer group interaction.

5) The development of self-instructional units can be expensive not only in faculty development time, but in the cost of media (i.e., television, films, computers, etc.). This problem can be alleviated by using the less expensive media first. Material can also be inflexible (e.g., films) and media chosen must recognize this weakness.

6) The lack of opportunity for direct patient involvement makes it difficult to reach some of the attitudinal and skill objectives of medical education, and impossible to reach others. This problem can be alleviated by emphasizing this weakness to faculty so that they use self-learning activities which involve realistic situations, problems and issues.

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Many of the cognitive aspects of history taking are dealt with in a significant number of self-instructional packages already developed by the Department of Pediatrics. The department has also developed some standard methods of taking a pediatric history and physical examination which are embodied in a document given to students when entering pediatrics (see Appendix B). Self-instructional and textual material developed for the course in Introduction to Clinical Medicine also are valuable aids to the development of skills in history taking.

Much experimentation is under way in improving self-instructional methods of teaching such clinical skills as history taking. Particularly important is the use of videotape recordings of student interviews with actual or simulated patients which can be played back to the student. This technique is already in use by the pediatric faculty in the Introduction to Patient Evaluation course. Videotapes might also be developed by skilled faculty for demonstration purposes. Also important in the development of cognitive information gathering skills are written simulation exercises in patient management. Two of these have already been developed and used as part of the student evaluation in the pediatric clerkship. They can, however, also be used for instructional purposes.

Experimentation with computer simulation of patient-management problems is also under way at The University of Texas Medical Branch, and could serve as a valuable method for student education and evaluation.

CHAPTER IV

GENERALIZATIONS REGARDING EVALUATION

Introduction

Evaluation plays a key role in the instructional model because it makes it possible for the faculty to learn from experience. Without adequate evaluation, it is impossible to modify the instructional strategies to ensure learning. Furthermore, evaluation methods are key instructional tools. The feedback available from evaluation procedures assists the student to identify his strengths and weaknesses, and to modify his behavior. Evaluation procedures also identify the objectives of instruction to the student. Written lists of objectives are meaningless unless these objectives are embodied in evaluation.

Below is a discussion of the evaluation procedures now included in pediatrics both in general terms and as the techniques relate to the specific ability of performing a history.

Preassessment Procedures (Step 2-b)

Although preassessment was discussed earlier, it is important to make some remarks here on this technique because it is a key evaluation method. Often a student fails to progress in a curriculum not because he lacks ability or motivation, but because he lacks the prerequisite information required to master the material being presented. At the present time, the Department of Pediatrics administers a multiple-choice examination which alerts the student to his possible deficiencies. Students who fail the clerkship final examination usually have demonstrated deficiencies on the preassessment examination. The desirability or feasibility of a formal remedial education program is under study.

Members of the faculty have also included extensive self-assessment examinations in each of the self-instructional packages being developed as part of the core curriculum in pediatrics. Again, these examinations are included to alert the student to his possible deficiencies in mastering the material included in the main parts of the package. Furthermore, in the Introduction to Clinical Medicine course, pediatric faculty teach and evaluate many of the basic procedures required of pediatric clerks.

Ideally, the student should not be permitted to advance to clinical learning experiences unless he has demonstrated mastery of the required prerequisite knowledge, or has entered on a formal program to remedy his deficiencies. The requirement that students pass basic science courses prior to advancing to clinical science studies arises from this concept. Implementation of the ideal system is hindered by 1) lack of information concerning the knowledge and abilities which are prerequisites to effective performance as a clinician; 2) uncertainty as to how to deal with the inevitable human tendency to forget what has been learned; and 3) the general difficulties of implementing any system dealing with individual differences among students in an environment containing large numbers of students, limited faculty and a fixed time schedule.

In regard to history taking abilities, the cognitive aspects are preassessed in the manner described above. Students are also given practice in the skill aspects of history taking, and are assessed in the Introduction to Patient Evaluation and Introduction to Clinical Medicine courses.

Formative Student Evaluation (Step 5-a-1)

Most of the formative evaluation of students in clinical settings comes about through the day-to-day feedback provided by the faculty on a one-to-one basis during the process of working up patients. The faculty's summative (end-of-course) evaluations are mainly the result of mentally recording incidents of effective and ineffective performance that occur during the clerkship. Students also receive considerable feedback from the formal pediatric seminars and rounds held during the course of the clerkship.

Despite its informal, incidental nature, the flow of feedback information to the student in his day-to-day activity is perhaps the most powerful influence that the clerkship provides in shaping student performance. Often, faculty fail to realize the power that the informal, incidental nods of approval and disapproval have on student performance and motivation. Furthermore, some faculty may fail to provide adequate feedback or provide inappropriate feedback. Up until now, there has been little analysis of the feedback system during the clerkship. It may be desirable to observe and to analyze feedback systems, and to provide instruction to house officers and faculty as to the best methods of utilizing this instructional procedure. Improved feedback may increase the attention students pay to feedback, and provide valuable information regarding the effectiveness of the pediatric clerkship program (see below).

In regard to history taking competence, the informal day-to-day discussion about individual patients, and the review of patient work-ups, is a powerful method of instilling practical concepts regarding information gathering. Some feedback regarding the ability to talk to patients is provided during the clerkship, but this feedback is less thorough or widespread than may be desirable (see earlier discussions of clerkship experiences). Studies need to be done to determine:

1) how much feedback the student assimilates;

2) whether the feedback is in keeping with the established objectives or is inappropriate and confuses the students; or

3) whether or not more formal structured methods of providing feedback would be desirable; and, if so, how to organize this feedback.

Summative Evaluation of the Students (Step 5-a-2)

Since summative (end-of-course) evaluations of students are required for certification purposes, this type of evaluation is the most thoroughly used by the Department of Pediatrics. Each faculty member and resident who has some significant contact with a student fills out a clerkship evaluation form which assesses the student on seven factors and an overall competence factor. (A copy of this form is shown as Figure 3, p. 28.) These factors have been designed to cover all of the behavior that the faculty can observe during the course of the clerkship.

These observation forms are supplemented by a comprehensive examination based upon the objectives of the Department. The faculty committee responsible for the comprehensive final examination analyzes each item and identifies a minimum pass level based on the analysis of individual choices in the item. This system of establishing the minimum pass level ensures that the student has achieved the level of knowledge required by the departments.[5] This avoids the tendency to arbitrarily assign a percentage of failures. This comprehensive examination is not an adequate measure of the skills and attitudes that the student must possess. Hopefully, many of the required skills and attitudes are evaluated by the clerkship evaluation form. It may be necessary to develop separate special examinations of such things as clinical interviewing skills or problem solving abilities through the use of formal observations as the students are interacting with real or simulated patients and the use of simulated written exercises of clinical problem solving. Written simulation exercises have already been included in the pediatric comprehensive examination. The Department has been experimenting with the use of oral examinations to assess the problem solving skills and the ability to interact with patients in the evaluation of house officers. It may be desirable to extend this examination to medical students.

The final method of summative evaluation of students is provided by the National Board Examination, Part II. Scores on this examination are included in the final grade, and students must pass the entire examination in order to graduate. The fact that the student must pass the National Board Examination serves as a stimulus to spend some time in review and integration of the clinical and basic science information that he has received during the previous three years.

In regard to assessment of history taking abilities, the clerkship evaluation form has two factors (Figure 3, Nos. 1 and 4, p. 28) which deal directly with these

Figure 3

ID#_____SERVICE_____ Instructor_____

Seven components of physician competence have been identified below. Students are to be rated from "Poor" to "Excellent." These extremes have been described below each scale.
Circle 1 or 9 if he is accurately described by either the "Poor" or the "Excellent" end of the scale.
Circle 2 or 8 if he is quite similar to one of the two ends of the scale.
Circle 3 or 7 if he is somewhat similar to one of the two ends of the scale.
Circle 4 or 6 if he displays characteristics slightly more at one end of the scale than at the other.
Circle 5 if both the characteristics of "Poor" and "Excellent" are present to an equal degree.
Circle X if you have insufficient information to rate the student. Comment on each student.

DATE: _____to_____

Name _____

1 INTELLECTUAL PROCESS OF OBTAINING INFORMATION BY HISTORY, PHYSICAL EXAM & LAB STUDIES.
X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Ignores leads -Uses time inefficiently -Has no clear rationale for procedures, questions, or orders -Does not question findings -Takes disorganized notes.

-Avoids stereotyped approaches -Correlates facts into meaningful whole -Discriminates in choice of questions, tests & procedures -Uses basic science knowledge to justify actions -Records data systematically.

2 PROBLEM-SOLVING & CLINICAL JUDGMENT-USE OF INFORMATION TO ARRIVE AT A DIAGNOSIS & DEVELOP A SOUND PLAN OF MANAGEMENT. X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Thinking about disease is limited in scope & restricted to a single approach -Unable to interpret unexpected results or often ignores them -Works at random without perceptible hypothesis -Too amenable to suggestion -Shows little independent thought -Approach to therapy is cookbook.

-Thinks in abstract objective terms, utilizing appropriate conceptions about disease -Applies basic science principles to clinical situations -Considers all data before reaching a decision -Is responsive to unexpected findings & seeks to determine their implications -Has a sound rationale for therapeutic decisions.

3 IMPLEMENTATION OF MANAGEMENT PLAN-TAKES ACCOUNT OF SOCIO-ECONOMIC, PERSONAL & FAMILIAL IMPEDIMENTS.
X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Focuses only on the immediate health problem -Tends to treat the patient in a stereotyped manner, without adapting his management to the special circumstances of each patient.

-Treats more than immediate problem -Is aware of specific social, economic, personal, & familial factors that affect management, & that compromise patient compliance -Adapts treatment to meet special needs.

4 WILLINGNESS & ABILITY TO ESTABLISH EFFECTIVE RELATIONSHIPS WITH PATIENTS.
X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Shows little evidence of interest in patients as persons -Approach is stereotyped & cold, or lacking in objectivity -Fails to provide adequate guidance to the patient & family, or is tactless & indiscreet in discussions with them -Discourages the patient from expressing his thoughts & anxieties -Is harsh & inconsiderate & may exhibit overt disapproval of the patient or, conversely, may become over-involved.

-Establishes & maintains a comfortable professional rapport with his patients -Attempts to overcome communication problems -Protects the confidence of the patient & provides appropriate explanations to patient & family -Encourages the patient to express his ideas, attitudes, and concerns -Conduct reflects kindness, respect, and honesty -Approach is mature, gentle, and accepting without over-involvement.

5 MANUAL SKILL AT TECHNICAL PROCEDURES.
X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Does not possess physical skills required to perform physical examination, or lab or therapeutic technical procedures required of a generalist or specifically taught during rotation -Needs additional training or lacks manual dexterity.

-Possesses mastery of the physical skills required to perform physical examination, and laboratory & therapeutic technical procedures required of a generalist or specifically taught during the rotation.

6 INTERPERSONAL RELATIONSHIPS WITH & UTILIZATION OF THE HEALTH TEAM (STUDENTS, STAFF, & PARAMEDICAL & PUBLIC HEALTH PERSONNEL). X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Fails to recognize the professional skills of others -Makes little effort or is unable to establish professional contact because he is quiet, insecure, or because he is defensive, tactless, inconsiderate or overly critical -Appears set in his ways -Unable to give or take advice gracefully -Unable to request required assistance -Is not aware of his limitations -Uses few contributions of others.

-Recognizes skills of others -Is discerning & eager to use their capabilities -Is able to establish professional relationships, effectively integrating contributions of others into the total care of the patient -Raises constructive questions -Obtains assistance as required -Offers advice discreetly -Uses initiative within his limits -Seeks advice and consultation when needed -Utilizes the contributions of others.

7 ATTITUDE TOWARD PROFESSIONAL RESPONSIBILITIES & UNDERSTANDING OF THE PHYSICIAN'S ROLE.
X Poor 1 2 3 4 5 6 7 8 9 Excellent

-Irresponsible regarding professional obligations -Unwilling or unable to accept responsibility for patient care -Easily frustrated by absence of quick success -Does not follow patients -Neglects to record important information on the chart -Has a rigid system of behavior & expectations -Is closed to the ideas of others -Does little reading -Demonstrates little interest in utilizing available experiences to develop his knowledge & skills.

-Accepts responsibilities associated with his role as a physician -Is willing & able to accept responsibility for the care of patients -Makes extra effort to follow patients -Keeps complete records to assure proper communication -Is open to the ideas of others & actively pursues development of his knowledge & skills -Shows evidence of utilizing reading & other sources of information.

OVERALL COMPETENCE TAKING ACCOUNT OF 1-7 ABOVE.

Unable to Evaluate	Failure	Question	Weak Pass	Pass	High Pass
X	1	2 3	4 5	6 7	8 9

Comment:

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abilities. The pediatric comprehensive examination and the National Board Examination deal with some of the prerequisites for effective performance. The written simulation exercises deal with some of the problem solving aspects of history taking. It may be desirable to use oral simulations to assess the history taking skills of students.

At this time, the student evaluation system is in the process of intensive study. We do not know how effective the clerkship evaluation form will be at identifying student weaknesses. Perhaps more time and energy will have to be devoted to formal evaluation of student competencies in history taking or to more extensive use of simulation exercises.

Formative Evaluation of Program and Instructional Materials (Step 5-b-1)

Formative evaluation of the program occurs in an informal fashion throughout the course of the program. Faculty hear student comments and respond to them. These comments are brought up at faculty gatherings and discussed. Up until now at least, there has been very little formal interim evaluation of the program. Some of the faculty members conducting pediatric seminars have asked students to fill out simple feedback forms which indicate students' attitudinal response to the particular seminar. These have proved to be very valuable in some cases. It might be desirable to use a technique such as item sampling to find out if the students have learned what the faculty member wished them to learn. Item sampling permits asking each student only a few questions but all of the students a large number of questions. By this method, large samples of content can be examined for a short expenditure of testing time. These simple short tests would be too unreliable to evaluate a student's performance but could be used to evaluate a program. Formal evaluations of student performance, such as written simulations or observations, given or taken while the student is taking the clerkship, can give the faculty insight into the effectiveness of the program, as well as provide the student with feedback as to whether or not he is meeting the course objectives. The importance of gathering such formative evaluation data during a clerkship will depend a great deal upon the objectives being considered and the instructional method being used.

The fact that the clerkship continues in operation for the whole year and consists of continued cycles of eight weeks so that new student groups enter the clerkship every eight weeks provides the opportunity of using summative evaluations as a source of formative evaluation data. Unlike the situation in basic science courses where the lag between the end of one course and the start of a new one is a period of seven months or so, the summative evaluation data is still fresh in the minds of the pediatric faculty at the beginning of the next clerkship.

Another method of formative program evaluation is to designate individuals, either faculty members or outside evaluators, such as members of the Office of Research in Medical Education to observe the ongoing program. This method has

been used and has yielded valuable insights. In regard to the assessment of ability to obtain histories as taught by the Department, the main formative evaluation procedure used has been the observation of the clerkship program by an educational psychologist from the Office of Research in Medical Education. Such observational studies need to be repeated from time to time.

Summative Evaluation of Program and Instructional Materials (Step 5-b-2)

There are several methods of summative evaluation of the program that are now being used. One method is to request feedback data from the students regarding both the student's perception of his achievement of the objectives and the student's perception of the effectiveness of learning experiences. A copy of this evaluation form is enclosed as Appendix C. Data is also solicited on the students' impression of both the attending and house staff faculty. A copy of this questionnaire is included as Appendix D. These feedback forms provide the faculty with some insight into the students' perceptions of the clerkship. By themselves, however, they may be very misleading. They must be accompanied by some specific data regarding student achievement of the objectives of the clerkship before they can have clear meaning. Data from the pediatric comprehensive examination which is used to evaluate students can be used to give insight into the effectiveness of the clerkship program. The National Board Examination also performs this role since the National Board of Medical Examiners provide normative data on both students and programs. The item analysis data obtained from both the departmental comprehensive and the National Board Examination also provides specific information about the students' cognitive achievement on various specific topics.

As the internal examination is reshaped to make it more precisely match the objectives and priorities conceived by the Department, the usefulness of the internal examination for summative program evaluation will be considerably improved. It may be that some area of weakness is of special concern to the Department. This area of weakness could be explored through some intensified evaluation with such techniques as item sampling. (See comments on Formative Evaluation of Program and Instructional Materials.)

It should be understood that the overall evaluation of a program includes analysis of all of the data generated by the other evaluation procedures listed above and much more. It includes continuous attempts to assure that the objectives, learning experiences and data generated about student performance are congruent so that the program developed will optimally utilize the time and resources available to the Department.

In regard to summative evaluation of the program's ability to teach history taking, it is evident that the program is organized to communicate the cognitive aspects of history taking, but is not necessarily organized as well to communicate the skills of history taking. In order to analyze the effectiveness of the program, evaluation of student competence in history taking must be improved.

PART II. DETAILED ANALYSIS OF THE PERFORMANCE REQUIREMENTS

PURPOSE

The purpose of Part II of the handbook is to present the specific objectives of the pediatric clerkship in context. In addition, there are some introductory comments which relate the area of performance to the generalizations regarding instruction and evaluation in Part I. Furthermore, we have developed some comments and suggestions which relate each of the objectives to problems of curriculum design and evaluation (see below). Part II is organized according to each of the detailed performance requirements listed in Table 4. This table also indicates the pages in the handbook devoted to the objectives under each performance requirement.

We realize that the organization of the analysis of a clerkship keyed to objectives is a somewhat artificial process compared to the way that most medical educators view their courses. The usual way that clerkship curricula are designed is to start with particular blocks of student time. The main question that most faculty have is what content areas to include and what and how many lectures and conferences to schedule during the time available. While these decisions still have to be made, some preliminary steps are essential. This section deals principally with those preliminary steps.

In very rare cases, such as the development of a new profession (e.g., physician assistant), the curriculum designer may be able to start with no preconceived notions about the structure of an educational program, but ordinarily he will start with a tentative series of learning experiences, either an existing program or a contemplated new program based upon the usual structure of such programs. As we have emphasized in Part I, before attending to such details as schedules, blocks of time, etc., the curriculum designer should first develop a set of specific program objectives. He should look at each of his objectives and ask himself the following questions:

1) Does the design of the learning experiences facilitate our reaching these objectives?

2) If the design is sound, is it being implemented appropriately and effectively?

3) What evidence do we have that the program is meeting its objectives?

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4) What changes might be desirable as a result of this analysis?

It may seem tedious to review a program in this analytical fashion. However, it is one of the most effective ways to uncover areas of strength and weakness. Furthermore, it offers the most economical way of evaluating program design before implementation, and of establishing priorities for the use of scarce resources.

Each chapter in Part II will contain the general and specific objectives under each major performance category. At the end of each chapter, we have presented the answers to each of the above questions as they relate to the clerkship in pediatrics at The University of Texas Medical Branch at the beginning of 1974.

TABLE 4

CRITICAL PERFORMANCE REQUIREMENTS FOR FUTURE PHYSICIANS AT THE END OF THE CORE BASIC AND CLINICAL EXPERIENCES

Chapter		Pages
I.	SKILL IN GATHERING AND RECORDING CLINICAL INFORMATION	38-50
	A. Eliciting Historical Information from the Patient and Other Sources	38-39
	B. Obtaining Information by Means of an Appropriate and Thorough Physical Examination	40-41
	C. Obtaining Information by Laboratory Examination	42-45
	1. Asking for the Appropriate Information	42-43
	2. Assuring the Reliability of Data (Method and Collection)	44-45
	D. Skill in Recording, Maintaining and Reporting Clinical Data	46-50
	1. Assuring that the Data are Recorded Promptly, Accurately, Completely and Clearly	46-47
	2. Effectiveness in Organizing Records to Assure Accessibility and Retrievability of Information	48
	3. Demonstrating Responsibility and Judgment in Storing and Maintaining the Confidentiality of Clinical Data	49-50
II.	COMPETENCE IN DEFINING THE PATIENT'S PROBLEMS	55-59
	A. Defining All Potential and Appropriate Aspects of the Problem Including their Interrelationships	55-56
	B. Utilizing Appropriate Resources	57
	C. Persisting to Establish a Definitive Diagnosis	58-59
III.	JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION	64-71
	A. Reacting Appropriately to Emergency Situations	64-65
	B. Evaluating Seriousness of Problem and Establishing Appropriate Priorities	66
	C. Developing Effective Treatment Plan	67-71
	1. Utilizing Appropriate Resources	67
	2. Considering Patient's Special Needs and Interests	68-69
	3. Attending to Proper Sequencing	70
	4. Selecting Treatment Most Appropriate to Level of Diagnostic Certainty	71

TABLE 4--Continued

Chapter		Pages
IV.	JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT	75- 91
	A. Performing Appropriate Tasks Undertaken with Adequate Skill	75- 87
	1. Surgical Technique	75- 77
	2. Counseling	78- 79
	3. Medication	80- 85
	a. Selecting and Carrying Out Appropriate Method and Route of Administration	80- 81
	b. Selecting and Calculating Appropriate Dosage	82- 83
	c. Attending to Appropriate Pharmacodynamics of Individual Situation	84- 85
	4. Marshalling Treatment Resources	86- 87
	B. Judgment in Monitoring Effects of Treatment	88- 89
	C. Providing Long-Term Care	90- 91
V.	ACCEPTING RESPONSIBILITY FOR HEALTH MAINTENANCE	96-107
	A. Planning and Implementing Individual Health Maintenance	96-102
	1. Establishing Screening Procedures	96- 97
	2. Arranging for Immunizations	98
	3. Minimizing Environmental Health Hazards	99
	4. Evaluating Growth and Development	100
	5. Anticipating and Counseling in Regard to Health Problems	101-102
	B. Planning and Implementing Community Health Maintenance	103-107
	1. Encouraging the Development of Screening Programs	103
	2. Supporting Preventive Medicine Programs	104
	3. Supporting Limitation of Community Health Hazards	105
	4. Encouraging Public Health Education Programs	106
	5. Encouraging the Most Effective Development and Use of Health Resources	107
VI.	EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARD HIS ROLE AS A PHYSICIAN	113-130
	A. Recognizing Professional Capabilities and Limitations	113
	B. Accepting the Necessity of Maintaining Professional Competence	114-122
	1. Developing Methods of Self-Evaluation and Improvement	114-116
	a. Scheduling Adequately for Attending and Participating in Educational Activity	114-115
	b. Gathering and Utilizing Reference Materials	116
	2. Maintaining an Attitude of Inquiry	117-118
	3. Demonstrating Concern for Understanding the Mechanisms of Normal and Abnormal Functioning	119
	4. Supporting and Participating in Medical Education	120-121
	5. Maintaining Personal Mental and Physical Health	122

TABLE 4--Continued

Chapter		Pages
VI.--Continued		
C.	Recognizing Primacy of Patient Welfare	123
D.	Relating Effectively to Patient and Family	124
E.	Relating Effectively to Other Medical Personnel	125
F.	Dealing Appropriately with Patients with Incurable Conditions	126-127
G.	Maintaining Sensitivity to Moral and Ethical Issues in Medicine	128
H.	Maintaining Awareness for Needs for Transplantations and Post-Mortem Examinations	129
I.	Accepting General Responsibility to Profession and Community	130

CHAPTER I

SKILL IN GATHERING AND RECORDING CLINICAL INFORMATION

Introduction

The abilities required to reach this performance requirement are described in the following pages. Although many of the comments regarding preassessment, the contribution of basic science core, learning experiences and evaluation have already been discussed in Part I (see Figure 2, p. 12), it may be useful to summarize some of the results of our analysis as they apply particularly to this area of performance.

The techniques of gathering information and recording it are introduced to the medical students at The University of Texas Medical Branch in the Introduction to Patient Evaluation course which extends over three terms of the freshman year. In the sophomore year, this material is reinforced by a ten-week Introduction to Clinical Medicine course which involves both large class sessions on common clinical problems and clerkship experiences in clinical departments. Pediatricians are actively involved in both of these interdisciplinary courses. The remainder of the basic science curriculum provides the students with the basic concepts required for the development and testing of hypotheses concerning the origin of a patient's signs and symptoms.

In regard to preassessment, the basic science course examinations, the National Board Part I and a pediatric pretest help the faculty and the student to identify gross inadequacies in knowledge. The Introduction to Patient Evaluation and Introduction to Clinical Medicine courses have been organized to provide feedback to the students about their development of the basic techniques for gathering information.

In regard to learning experiences, much of the pediatric clerkship is designed to develop and reinforce information gathering abilities through the day-to-day work-up of patients. The student's activity in the pediatric out-patient clinic is an especially important learning experience designed to give the student practice in information gathering. The departmental seminars and instructional materials support the development of these abilities.

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Concerning evaluation, there is much emphasis in the day-to-day contact between students, house officers and faculty on the process of information gathering. Students are often required to justify the inclusion or exclusion of information regarding patients from their charts. Opportunities for the student to receive feedback on the process of interviewing and physical examination are less frequent.

The formal evaluation procedures used by the Department thoroughly sample knowledge, but not hypothesis testing or the process of information gathering. The Department recently has started using written simulation problems which assess the hypothesis testing abilities of the student as part of the pediatric comprehensive examination. Experimentation is also under way with oral examinations to improve the assessment of the technique of information gathering both in terms of the students' ability to develop and test hypotheses and their ability to establish rapport with patients (see Part III).

The answers to the questions posed on pages 31 and 32 in regard to the objectives discussed in this chapter are given in pages 51 through 53.

IA. ELICITING HISTORICAL INFORMATION FROM THE PATIENT AND OTHER SOURCES

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. willing to undertake repeated examinations during initial contact as well as in course of total contact;
b. sensitive to reactions of patient to the questions asked, but tenacious in insisting upon obtaining the required information;
c. willing to adapt method of questioning and approaching patient to the individual patient and situation;
d. empathetic and respectful to the patient as a fellow human being going through an anxiety-producing experience;
e. willing to take necessary steps to assure the validity of all the information he utilizes.

II. Knowledge and Understanding

An appropriate history is one which enables the physician to begin to develop some hypotheses regarding the patient's condition, as well as develop the opportunity to provide information to the patient regarding health maintenance. The physician must gather data which will enable him to decide on the additional diagnostic steps and/or health maintenance advice or procedures that would be useful to the particular patient he is interviewing. In order to do this, the physician should possess knowledge and understanding of

a. all of the historical categories on the Outline of History and Physical Examinations produced by the Introduction to Clinical Medicine course (see Appendix A), as well as any supplemental directions produced by clinical departments;
b. the mechanisms of pathophysiology and the influence of the psycho-social environment on function so that he can identify the common clusters of symptoms and, therefore, thoroughly and efficiently explore the initial complaint;
c. the basic principles of interviewing which enable the interviewer to obtain accurate information, both factual and attitudinal, regarding the patient, and methods of establishing confidence and trust in the interviewer;
d. the dangers of failing to verify important information concerning the patient's primary care.

III. Skills

The physician must be able to establish rapport with the patient so that the patient is willing to provide all of the essential information and develop confidence in the physician. The physician, therefore, must be able to

a. avoid leading or distracting questions;
b. reinforce by his manner and comments the patient's willingness to talk.

The physician must also be able to talk effectively to other physicians and other health personnel regarding patient problems.

IA. ELICITING HISTORICAL INFORMATION FROM THE PATIENT AND OTHER SOURCES

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Reinforcement of items in general objectives. The experience of obtaining histories from families and children should be an especially effective method of developing these attitudes.

II. Knowledge and Understanding

Reinforcement of previous learning about most disease mechanisms, particularly important new understandings about normal development of infants and children, and the historical manifestations of genetic and congenital defects in children; also, specific techniques for gathering information from families and children.

III. Skills

Reinforcement of items in general objectives. New skills in talking with families and children should be developed during the clerkship.

NOTE: The Guide for Pediatric History and Physical - Appendix B.

IB. OBTAINING INFORMATION BY MEANS OF AN APPROPRIATE AND THOROUGH PHYSICAL EXAMINATION

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. willing to undertake repeated examinations during initial contact as well as in course of total contact;
b. sensitive to the reactions of the patient to the physical examination, yet tenacious in assuring accomplishment of the examination;
c. willing to adapt his technique to the individual situation;
d. empathetic and respectful to the patient as an individual who is undergoing an anxiety-producing experience.

II. Knowledge and Understanding

An appropriate physical examination is a thorough and complete examination that effectively follows up the patient's complaints but does not neglect basic screening procedures which are essential and pertinent during most contacts with patients.

In order to perform effectively, the physician should possess knowledge and understanding of

a. all of the physical examination categories on the Outline of History and Physical Examinations produced by the ICM course (see Appendix A), as well as any supplementary directions issued by clinical departments;
b. the mechanisms of pathophysiology and influence of psycho-social environment on function so that he can identify the common clusters of symptoms and, therefore, thoroughly and efficiently follow up the initial complaint and historical information;
c. topographical anatomy and the possible variations from normal.

III. Skills

The physician must be able to

a. adequately perform all of the procedures outlined in Appendix A and other supplementary procedures;
b. recognize subtle variations from normal;
c. be gentle in the conduct of the physical examination;
d. communicate the impression to the patient by his manner and actions that
   1. the examination is essential to the patient's future well-being;
   2. that he, the physician, understands the pain, anxiety and embarrassment being provoked in the patient by the physical examination.

IB. OBTAINING INFORMATION BY MEANS OF AN APPROPRIATE AND THOROUGH PHYSICAL EXAMINATION

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should provide reinforcement of attitudes listed in the General Objectives. Particular emphasis in pediatrics might be to increase the student's awareness of the physical examination as an effective screening device in health maintenance, and the student's ability to express these attitudes in contacts with families and children.

II. Knowledge and Understanding

The clerkship should reinforce the material introduced during the first 70 weeks and in other clerkships. In addition, the clerkship should contribute knowledge and understanding of

a. the normal physical findings in immature patients;
b. the situations when it is important and appropriate to use the more extensive or invasive examinations, especially in immature patients in regard to their emotional and developmental characteristics;
c. situations when it is appropriate to use sedation and restraints in examining children.

III. Skills

The clerkship should provide reinforcement of previous skills, but introduce new skills required to examine effectively newborn, infants, children and adolescents, including some of the specialized skills required for developmental analysis (see Appendix B). The student should also develop skills in the use of appropriate sedation and restraints in examining children.

IC1. OBTAINING INFORMATION BY LABORATORY EXAMINATION

GENERAL OBJECTIVES

I. Attitudes

The physician should demonstrate

a. awareness and concern about the influence of laboratory tests on his patients in terms of cost, pain and danger by being selective in his ordering of laboratory tests;

b. willingness to evaluate and reevaluate critical laboratory results.

Also note that attitudes in IA are appropriate here also.

II. Knowledge and Understanding

a. In order to be selective in the ordering of laboratory tests so that they can lead to effective solutions of patient problems, the physician must

1) be aware of the available laboratory procedures and their purposes;
2) be familiar (from his knowledge of reliable sources) with normal values;
3) understand mechanisms of pathophysiology and psycho-social functioning;
4) be able to develop hypotheses on patient's condition based on other data which will be tested or refined by selected laboratory data;
5) equate the laboratory findings with the dynamics of the patient's condition; and
6) recognize the tests which are an appropriate extension of the physical examination; i.e., CBC, chest x-ray, urinalysis.

Note: This section refers to laboratory tests for hypotheses testing. The laboratory use for screening purposes is discussed elsewhere.

b. He should be aware of the necessity for attention to appropriate timing and sequence in using lab tests.

c. He should be aware of the effects of laboratory tests on the patient.

III. Skills

a. He should be able to organize the timing and sequence of tests.

b. He should be able to communicate clearly with patient and other personnel performing the tests concerning their purpose, and the risk, discomfort and cost associated with the test.

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IC1. OBTAINING INFORMATION BY LABORATORY EXAMINATION

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Reinforcement of those attitudes in the General Objectives. Observation of problems of obtaining specimens and performing tests on children should help to reinforce these attitudes effectively.

II. Knowledge and Understanding

Reinforcement of those abilities already developed. Pediatrics will contribute knowledge of differences between adults and children, and variations introduced by growth and development. Particular emphasis should be made in pediatrics on the laboratory findings for infectious diseases most common in children and those helpful in uncovering congenital and genetic disorders, particularly those which quickly affect growth and development.

III. Skills

The pediatric clerkship should begin to develop these skills in students in regard to the disorders most important for pediatric patients.

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IC2. ASSURING THE RELIABILITY OF LABORATORY DATA (METHOD AND COLLECTION)

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. willing to accept responsibility for assuring that details of collection technique are carefully followed;
b. willing to reexamine context or circumstances which influence the interpretation of test results and when appropriate to repeat tests;
c. sensitive to the potential reactions of the patient to the test and eager to minimize the patient's discomfort and inconvenience.

II. Knowledge and Understanding

The physician should possess knowledge and understanding of

a. the general method used to perform the test he is ordering or a source from which he can obtain some understanding of the method so that he can select the most appropriate examination for the patient's situation;
b. the fact that diagnostic tests have finite limits of reliability and inherent sources of error;
c. the fact that test selection must relate to the specific situation to which it is applied, and the criteria that must be used to decide which tests are most appropriate in a given situation;
d. the natural course of some diseases and therapies which may influence test results so that he is able to selectively order repetitions of laboratory tests.

III. Skills

The physician should be able to

a. develop proficiency in securing representative speciments for analysis without undue risk or discomfort to his patient;
b. explain the purpose and events of procedure to his patient objectively so as to allay unnecessary anxities and hostilities on the part of the patient.

IC2. ASSURING THE RELIABILITY OF LABORATORY DATA (METHOD AND COLLECTION)

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The existing attitudes should be reinforced. In addition, the pediatric clerkship should offer experiences which assist the development of the following attitudes.

a. Awareness of the necessity of being gentle in specimen collection.
b. Awareness of the fact that different methods must be used in discussing laboratory tests with patients at different age levels.
c. Awareness of the variations in biological characteristics due to age.
d. Awareness of the need to use laboratory resources in a highly selective manner.

II. Knowledge and Understanding

a. In addition to reinforcement, the pediatric clerkship should provide emphasis on the specific sources of collection and laboratory variation inherent in laboratory tests in children.
b. Understanding the purpose of patient preparation for tests so as to write appropriate pretest orders.
c. emphasis on the necessity for interpreting data against the background of an immature and changing host as he becomes more ill or responds to treatment.

III. Skills

The student should be reinforced in whatever skills he may have developed. The pediatric clerkship should give him demonstrations followed by supervised performance on preparing young patients for lab tests and the collection of specimens from them. This should include technical methods he should perform as well as those he may regularly request others to perform on his patients.

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46 ID 1. SKILL IN RECORDING, MAINTAINING AND REPORTING CLINICAL DATA BY ASSURING THAT THE DATA ARE RECORDED ACCURATELY, COMPLETELY, CLEARLY AND PROMPTLY

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. willing to be accurate in the collection of data (see I A, I B, I C);
b. willing to record the data at a time that has close proximity to the time when collected;
c. willing to correct data that is erroneous or incomplete;
d. recognize that data (historical, physical or laboratory) are of no use until they are recorded in a logical sequence in the patient's health record;
e. willing to assume that the data reaches the person who will use it in time to be useful;
f. willing to take time necessary to record data legibly, without jargon in an easily interpretable fashion.

II. Knowledge and Understanding

The physician should

a. have sufficient knowledge of the total problem to allow succinct recording;
b. be aware of current methods of data recording;
c. be aware of the value of records in documenting the health history of the patient;
d. be aware of the value of records in documenting the role of all health personnel involved in the care of the patient;
e. be aware of the necessity for the prompt recording of data;
f. recognize the value of recording certain data on charts, flow sheets, etc.;
g. recognize that readers of a medical record will not be able to interpret what the physician is thinking unless it is recorded;
h. possess sufficient knowledge and ability to record data that are not susceptible to misinterpretation.

III. Skills

The physician should be able to take a complicated problem and record it in a concise and legible fashion, record the patient's problems in a logical and orderly sequence, and use recording equipment effectively in developing patient records.

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ID 1. SKILL IN RECORDING, MAINTAINING AND REPORTING CLINICAL DATA BY ASSURING THAT THE DATA ARE RECORDED ACCURATELY, COMPLETELY, CLEARLY AND PROMPTLY

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Introduction and/or reinforcement (see note below).

II. Knowledge and Understanding

Pediatrics should contribute to understanding the role and value of standard growth and developmental scales, and other standard normograms, in displaying information about the patient for patient records. It should also reinforce the student's knowledge of the value of records in care of children.

III. Skills

Introduction and/or reinforcement.

NOTE: This objective must be developed in the clinical setting. The pediatric clerkship will introduce these concepts if it is the first clerkship encountered, and reinforce them if the student takes pediatrics later in the year. Whether or not this reinforcement will take place will depend upon the effectiveness of the record keeping system employed in pediatrics.

ID 2. EFFECTIVENESS IN ORGANIZING RECORDS TO ASSURE ACCESSIBILITY AND RETRIEVABILITY OF INFORMATION

GENERAL OBJECTIVES

I. Attitudes

The physician should
- a. recognize the need for indexing the patient's problem(s) in a manner that is convenient and easily retrievable;
- b. be willing to devote the time to index the multiple problems that are extracted from the historical, physical, and laboratory analysis;
- c. be willing to aid in the development, use and implementation of a form of record which would allow ready access to all information;
- d. recognize the need for ready accessibility of recorded information in the diagnostic and therapeutic phases of health care.

II. Knowledge and Understanding

The physician should possess knowledge and understanding of
- a. some system in which indexing can be made useful, e.g., Weed system;
- b. the basic requirements of an adequate record system, i.e., indexing readily retrievability, case of reporting information, sequence of information, etc.;
- c. the advantages of an effective record system in good patient care.

III. Skills

He should be able to index patient problems so that they may be identifiable, and skill in implementing a system of recording.

ID 2. EFFECTIVENESS IN ORGANIZING RECORDS TO ASSURE ACCESSIBILITY AND RETRIEVABILITY OF INFORMATION

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes (See note on IIA.)

Introduction and/or reinforcement.

II. Knowledge and Understanding

The clerkship will provide the opportunity of gaining information on the unique problems of keeping records on children.

III. Skills

Introduction and/or reinforcement.

ID 3. DEMONSTRATING RESPONSIBILITY AND JUDGMENT IN STORING AND MAINTAINING THE CONFIDENTIALITY OF CLINICAL DATA

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. sensitive to the patient's privacy in discussing and recording data;
b. willing to instruct office personnel on the confidential nature of all medical records;
c. willing to screen fully all requests for medical information from places such as insurance companies, schools, places of employment, etc.;
d. willing to recognize that certain information may be in a chart unbeknownst to the patient and that his "reference" should have excluded this information.

II. Knowledge and Understanding

The physician should

a. know that medical records do not become obsolete after the patient has died and therefore must be maintained;
b. know of the many medical-legal and many other uses of the medical record;
c. know of the things that should be excluded from the record, e.g., personal biases, prejudices, vendettas, etc.

III. Skills

He should possess the ability to appropriately evaluate information that should or should not go into the medical record.

ID 3. DEMONSTRATING RESPONSIBILITY AND JUDGMENT IN STORING AND MAINTAINING THE CONFIDENTIALITY OF CLINICAL DATA

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes (See note on ID 1.)

Respect for confidentiality of information when dealing with children and between children and parents.

II. Knowledge and Understanding

a. Knowledge that the statute of limitation for children is 18 plus 3 years, i.e., different for child than for adult.
b. Knowledge of rights of minors and rights of parents and guardians to give permission for treatment.

III. Skills

Ability to evaluate which information on child is confidential and which should be transmitted to family.

Question 1:

Does the design of the learning experience facilitate our reaching these objectives?

Although not all of the behaviors described in the objectives are developed and reinforced with equal effectiveness in the entire medical school curriculum at The University of Texas Medical Branch, the design of the curriculum as a whole seems to be quite effective and logically based in developing these competencies. The Department of Pediatrics' curriculum emphasizes techniques of information gathering, as well as the signs and symptoms of major clinical entities involved in the care of children. About half the student's time is spent in the pediatric out-patient clinic which, as was mentioned earlier, offers an excellent opportunity for the students to practice information gathering skills in a realistic setting.

The soundness of the basic design should not blind us to some weaknesses which are not only true of pediatrics but characterize most clinical experiences in medicine today. The major weakness seems to be in the feedback system. In order to master the objectives described, the students must be given the opportunity to practice and receive appropriate and pertinent feedback. The hospital ward experience which can offer the opportunity for the student to demonstrate his hypothesis development ability is characterized by group decision making which can allow students to hide their conceptual inadequacies. In addition to ability at hypotheses development and testing, the performance requirement of gathering information requires the student to develop some interpersonal and manual skills, including:

a) Ability to interact with patients.

b) Ability to gather data from sources other than patients.

c) Ability to examine patients.

d) Ability to gather specimens for laboratory testing.

e) Ability to interpret the results of laboratory findings.

f) Ability to record data in a logical fashion.

Skill development requires that the learner be given a clear description of the steps required to accomplish the skill, and opportunities to practice and receive feedback regarding his adequacy of performance. Although some of the skills are taught more effectively than others, the teaching of most is deficient in all of these respects. It may be true that the time that students have available during their core basic clinical science experiences is so short that mastery of these basic clinical skills is not to be expected. Almost all the students have from two to five

more years of clinical experience available to them at the conclusion of the clinical science core experience. The majority of them will have at least five years' experience. Therefore, it is reasonable to assume that the minimum level of skills required during the clerkship period is moderate. However, since we are uncertain that the post-graduate experiences provide these skills, we should strive to improve the teaching of them to the extent possible in the time available.

Question 2:

If the design is sound, is it being implemented appropriately and effectively?

Difficulties in implementation seem to relate to the varying ability of faculty and house officers to relate to students, the lack of specific objectives and the lack of appropriate feedback in many instances. Many of our thoughts regarding the implementation of the curriculum for developing these abilities are discussed in Part I, Chapters III and IV, and need not be repeated here.

Question 3:

What evidence do we [illegible] that the program is meeting its objectives?

The students at the conclusion of the clerkship must all pass the National Board Part II Examination and the pediatric comprehensive examination or a make-up examination. Furthermore, the average performance of the students on the National Board Part II Examination is congruent with what would be expected of students of their ability. The students themselves believe that they have reached adequate levels of accomplishment in regard to skills, based upon the responses they give on the student feedback forms. We are less certain that the students have reached adequate levels of accomplishment in regard to the more complex behaviors described in the objectives (e.g., problem solving, ability to relate to patients). The students who are grossly deficient in relating to patients come to the attention of the faculty, and arrangements are made for special attention. In most cases, this results from psychological and emotional problems, and many students in this situation have sought psychiatric counseling. The Department is not satisfied with the evidence it is gathering on student accomplishments of complex skills, and much effort has been and will be devoted to improving its evaluation methods.

Question 4:

What changes might be desirable as a result of this analysis?

Part I has alluded directly and indirectly to a number of changes in the method of conducting the clerkship. The most important of these as they relate to performance requirements in Category I are listed on the following page:

1) The list of objectives included in this chapter contain a number of statements regarding what students must be able to accomplish. These lists of statements need to be extended and evidence needs to be gathered as to whether the specific expectations we have outlined are realistic.

2) Experiments need to be continued in the use of oral, written and patient simulations as methods of teaching and assessing problem solving abilities and the information gathering and related skills described.

3) Workshops on principles and practice of education for faculty and house officers need to be repeated and improved.

4) More emphasis needs to be placed on the ability to use sources other than the patient for historical information.

5) More emphasis needs to be placed on the abilities involved in record storage and retrieval.

6) Work should be started on creating self-instructional packages for developing information gathering abilities in medical students. Among these are videotapes, demonstrating physical examination skills, appropriate history taking, etc. Prototypes for such materials have already been developed for the Introduction to Patient Evaluation and Introduction to Clinical Medicine courses (see Part III).

7) Work needs to be continued in improving the student's ability to gather information in a problem oriented form (see Part II, Chapter II).

CHAPTER II

COMPETENCE IN DEFINING THE PATIENT"S PROBLEMS

Introduction

The objectives included under this performance requirement are closely related to those objectives described under Information Gathering, Part II, Chapter I. Certainly, the prerequisite knowledge for testing hypotheses and arriving at conclusions are similar and closely related to the basic knowledge required for hypothesis development. However, the learning experiences utilized in developing the Competence in Defining Problems are somewhat different from those in Category I. Students practice information gathering by interviewing and dealing with individual patients. Students practice problem definition in ward rounds, conferences regarding individual patients and summaries of individual patient evaluations made in the clinic. The use and analyses of the problem oriented record is an extremely important vehicle for developing problem definition abilities. This ability is often evaluated in the day-to-day sessions with house staff and faculty. The feedback which the student receives may be rather poorly defined, and he may not be aware of how well he did or did not perform on definition of problems. The present summative evaluations deal mostly with the prerequisites for problem definition and rarely require the student to demonstrate the more complex facets of problem solving.

The answers to the questions posed on pages 31 and 32 in regard to this chapter are given in pages 60 and 61.

IIA. COMPETENCE IN DEFINING THE PATIENT'S PROBLEMS BY DEFINING ALL POTENTIAL AND APPROPRIATE ASPECTS OF THE PROBLEM INCLUDING THEIR INTERRELATIONSHIPS

GENERAL OBJECTIVES

I. Attitudes

The physician should be
- a. willing to recognize that patients have problems which may not coincide with standard diagnoses;
- b. willing to reexamine the historical, physical and laboratory aspects of the patient's problems as often as necessary to establish a definitive diagnosis;
- c. sensitive to the impressions of the patient's problems as they might relate to sex, age, and/or background (socioeconomic, ethnic, racial or religious);
- d. consciously attempting to avoid letting his personal biases and preconceived ideas interfere with his analyses of the patient's problems;
- e. striving to avoid premature assignment of diagnosis.

II. Knowledge and Understanding

The physician should
- a. have sufficient knowledge of patho-physiology and interactions of psycho-social functioning to allow him to begin to categorize problems in defined areas;
- b. be able to recognize the relationship among problems including the priority of problems with sufficient insight to avoid letting one problem interfere with his understanding of other problems;
- c. be able to develop hypotheses based on data that are available.

III. Skills

The physician should be able to
- a. organize the problems in a logical sequence as to severity and etiology;
- b. discuss these problems in a logical sequence with colleagues.

IIA. COMPETENCE IN DEFINING THE PATIENT'S PROBLEMS BY DEFINING ALL POTENTIAL AND APPROPRIATE ASPECTS OF THE PROBLEM INCLUDING THEIR INTERRELATIONSHIPS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Reinforcement of attitudes listed in General Objectives.

Pediatrics should help the student to gain insight into the difficulties of obtaining an objective analysis of problems in children.

II. Knowledge and Understanding

Reinforcement of those aspects listed in General Objectives.

Pediatrics should give the student particular insight into the lists of possible problems that may involve children and the ramifications of these problems in terms of the psycho-social functioning of the family. Particularly important are childhood infectious diseases, and genetic and congenital defects which affect growth and development.

III. Skills

Reinforcement of those listed in General Objectives. Observation of patients should assist students in ranking priority of problems (primary), particularly those in children.

Introduction and education in the use of the "Weed" system or some similar technique.

IIB. COMPETENCE IN DEFINING THE PATIENT'S PROBLEMS BY UTILIZING APPROPRIATE RESOURCES

GENERAL OBJECTIVES

I. Attitudes

See IA 1, IA 2, IB 1, IC 1, and IIA.

The physician should be
a. willing to seek out solutions to problems that are unfamiliar to him;
b. able to recognize that all new problems have potential solutions and that old problems may have improved solutions.

II. Knowledge and Understanding

The physician should
a. possess sufficient knowledge about pathophysiology and/or interruptions to psycho-social functioning to allow him to recognize the need for consultation;
b. know of a source(s) from which additional information relative to patients' problems can be obtained.

III. Skills

He should be
a. able to utilize present and future systems of communication for rapid acquisition of pertinent resourse material;
b. able to organize his own system of resource material, e.g., books, journals and tapes, so that it is readily available and frequently used. (See category VI-B2.)

IIB. COMPETENCE IN DEFINING THE PATIENT'S PROPLEMS BY UTILIZING APPROPRIATE RESOURCES

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Reinforcement.

II. Knowledge and Understanding

The clerkship should
a. make the student aware of the resource material that is peculiar to children;
b. provide some models of how resource material is used in the treatment and diagnosis of childhood disorders.

III. Skills

Reinforcement.

The clerkship should assist the student in establishing his own reference system.

IIC. COMPETENCE IN DEFINING THE PATIENT"S PROBLEM BY PERSISTING TO ESTABLISH A DEFINITIVE DIAGNOSIS

GENERAL OBJECTIVES

I. Attitudes

The physician should be willing to

a. consider all available information in arriving at the proper and correct diagnosis;
b. recognize that the preliminary diagnosis is merely presumptive;
c. reexamine all information as often as necessary in arriving at final diagnosis;
d. use his knowledge of the pathophysiology of disease in arriving at a correct diagnosis;
e. recognize that some problems are not assignable to known clinical diseases or syndromes and may well represent new diseases;
f. recognize that some persons have more than one diagnosis;
g. "test" his final diagnosis;
h. recognize in some instances that therapeutic measures are needed in establishing a definitive diagnosis.

II. Knowledge and Understanding

See categories I, IIA and IIB.

The physician should demonstrate judgment in integrating clinical information.

III. Skills

See categories I, IIA and IIB.

The physician should be able to

a. take any group of problems; categorize them in a logical sequence and arrive at some diagnostic impressions; while at the same time recognizing those problems which do not group logically;
b. elicit data which is most appropriate to establishing definitive diagnosis.

IIC. COMPETENCE IN DEFINING THE PATIENT'S PROBLEM BY PERSISTING TO ESTABLISH A DEFINITIVE DIAGNOSIS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Reinforcement.

II. Knowledge and Understanding

The clerkship should give the student some insight into diseases of children which are unique (newborn).

III. Skills

Reinforcement.

Question 1:

Does the design of the learning experience facilitate our reaching these objectives?

The present clerkship design provides numerous opportunities for the student to observe the process of problem definition and, at times, participate in interactions with faculty and house officers in situations where he is given the opportunity to present his conceptualization of the patient's problem and his method of resolving it. However, the fact that the student is a member of a team of students, house officers and faculty makes it much less likely that he will be given the opportunity individually to arrive at problem definitions that can be used as the basis of feedback to him as was the case in information gathering. The problem oriented record is certainly a helpful tool in assisting the faculty and house officers in making use of the clerkship experiences of students and developing their abilities at problem definition. It may be that the student is at too early a stage in his career to expect that his ability to solve problems will be very well developed at the conclusion of his core clinical science learning experiences. Perhaps this is one of the abilities that must be developed in graduate medical education. As the discussion under Question 2 indicates, there is very little evidence being gathered at this point to answer this question. It seems, though, that the program could include an expanded use of simulation types of experiences to assist in developing and providing feedback on the student's ability at problem definition.

Question 2:

If the design is sound, is it being implemented appropriately and effectively?

As was mentioned earlier, the principal defect in the design is the lack of individual opportunities for the student to present his conclusions and receive feedback from them. However, such opportunities do exist and are exploited variably. As in Category I, difficulties relate to the varying ability of house officers and faculty in relating to students and the lack of faculty understanding of the need to allow the students to present their specific conclusions during sessions in which patients are being discussed. A further problem is that the problem oriented record is imperfectly understood by students, faculty and house officers. The use of this record is new, and as experience with it grows and departments agree on the best method of using it, it is probable that it will be considerably improved.

Question 3:

What evidence do we have that the program is meeting its objectives?

Methods of evaluating the problem solving ability of students are weak. At the present time, we have little evidence on the student's ability to conceptualize

problems in pediatrics.

Question 4:

What changes might be desirable as a result of this analysis?

The most important of these are indicated below:

1) The program should develop simulated situations in which the students can gain insight into their ability to define problems. Many of the exercises that are used as part of the self-instructional materials are of this type. The use of such exercises should be evaluated.

2) Attempts should be made to develop exercises to evaluate competence in problem definition. The oral examinations and written simulation exercises which measure the ability to develop hypotheses can also yield important information on the ability to test hypotheses and come to conclusions. In this respect, Category I and Category II abilities are closely related.

3) Special instructional materials have been developed to assist the student in learning about the problem oriented record. The effectiveness of these materials should be analyzed and improved to assure that the students develop the ability to use this system.

CHAPTER III

JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION

Introduction

The objectives in Part II, Chapter I, Information Gathering, dealt with abilities which require some basic skills (e.g., physical examination), and knowledge and understanding of basic science. Chapter II, Problem Definition, required problem solving ability of a cognitive type, similar in thinking process to that demanded of all trained professionals (e.g., engineers). The present chapter requires both a different type of problem solving ability and different types of knowledge. The knowledge required is that basic to understanding and performing therapeutic procedures - knowledge of various treatments and their effects on patients. The ability we define as judgment is often called wisdom or common sense. It involves sensitivity to the particular needs of a particular patient situation. It requires some knowledge of the world and human affairs beyond the laboratory or the classroom. It also requires the physician to demonstrate some additional types of interpersonal skills - the ability to maintain calm under pressure, and the ability to organize one's activities quickly and adopt a systematic method of approaching problems.

Although much of the rationale for the decisions that physicians are required to make comes from basic science, the clinical clerkship experiences bear the major burden of integrating the basic science background with clinical problems which helps develop in the student the judgment required to perform effectively. Characteristics of various treatment modalities may be learned in other clerkships, but children may present unique treatment problems which will only be discussed during the pediatric clerkship.

The student learns about treatment in the out-patient clinic, the wards, and the emergency room. In these settings, he encounters the day-to-day application of clinical judgment by skilled practitioners. Furthermore, a significant number of the seminars and self-instructional packages developed by the Department deal with the judgment required of a physician in providing care for children presented with various symptoms, some of which may be serious emergencies (e.g., seizures, shock, burns, etc.). The experience in the emergency room usually has the most emotional impact of these experiences. It may be difficult for the student to

practice making decisions on his own, and the emotional impact of the emergency room experiences may be so great as to interfere with learning as well as facilitate it.

The evaluation procedures that are presently used rarely provide information on the student's clinical judgment. Multiple choice questions reveal some of his knowledge of treatment modalities, but are not complex enough to explore his judgment. The inexperience of the student requires that he be closely supervised during his clinical experiences so that little opportunity is afforded him to demonstrate his individual decision making ability.

The answers to the questions posed on pages 31 and 32 in regard to the objectives discussed in this chapter are given in pages 72 and 73.

IIIA. DEMONSTRATING JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY REACTING APPROPRIATELY IN EMERGENCY SITUATIONS

GENERAL OBJECTIVES

I. Attitudes

The physician should
- a. strive for objectivity;
- b. be willing to be thorough;
- c. be empathetic;
- d. be willing to do only those things which experience and education permit.

II. Knowledge and Understanding

He should possess
- a. knowledge of relative stability or tolerance of an organ system to adverse conditions;
- b. knowledge of effects of treatment on other patient problems;
- c. knowledge of one's own competence limits;
- d. knowledge of appropriate steps to take in reacting to each of the conditions on the attached list or similar conditions not listed.

Mastery of categories I, II.

III. Skills

See skills of categories I and II.

The physician should
- a. be able to obtain appropriate information efficiently concerning very ill patients;
- b. be able to make immediate assessment of life or death;
- c. be able to maintain a calm, orderly approach despite urgency of problem.

Emergency Situations
- a. Airway obstruction
- b. Hemorrhage
- c. Shock
- d. Seizures
- e. Cardiac arrhythmias
- f. Congestive heart failure
- g. Intoxications (poisonings, overdose and side effects)
- h. Alveolar--capillary block (drowning, asthma, pneumonia and bronchitis)
- i. Anaphylaxis
- j. Coma
- k. Dehydration
- l. Burns
- m. Psychiatric (suicide, homicide, child abuse)
- n. CNS injury
- o. Fractures and lacerations
- p. Pain

IIIA. DEMONSTRATING JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY REACTING APPROPRIATELY IN EMERGENCY SITUATIONS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship will introduce and reinforce attitudes listed in the General Objectives through the emergency room and patient care contacts.

II. Knowledge and Understanding

IIA, B, and C introduction and reinforcement of specific information regarding items in General Objectives relate to emergency situations involving children (see list).

III. Skills

Introduce and reinforce abilities to select treatment priorities through clinical experience and appropriate models. Place a special emphasis on how to accomplish these skills in children (listed in the General Objectives).

NOTE: Understanding of treatment requires interaction with knowledgeable clinicians regarding patient care problems of individual patients. The pediatric clerkship will introduce or reinforce the students general understanding of treatment while providing specific knowledge about conditions specifically relating to children.

IIIB. DEMONSTRATING JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY EVALUATING SERIOUSNESS OF PROBLEM AND ESTABLISHING APPROPRIATE PRIORITIES

GENERAL OBJECTIVES

I. Attitudes

See IIIA.

In addition, the physician should seek to take into account the wishes of the patient and his family in deciding on treatment.

II. Knowledge and Understanding

The physician should have mastered those categories I - II needed to judge the seriousness of the patient's condition.

He should
a. have sufficient knowledge of the characteristics of the various types of treatments available to him in patients in non-emergency situations to decide the priority of treatments, and
b. be aware of the limits of his knowledge.

III. Skills

He should be able to maintain calm orderly approach under pressure.

IIIB. DEMONSTRATING JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY EVALUATING SERIOUSNESS OF PROBLEM AND ESTABLISHING APPROPRIATE PRIORITIES

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes (See Note in IIIA.)

Pediatric clerkship will provide clinical situations which will especially reinforce need for empathy, self evaluation and attention to needs of family.

II. Knowledge and Understanding

Pediatric Clerkship will introduce him to therapeutic situations particularly common in children, e.g., infectious diseases, cogenital and genetic disorders, anemias, and developmental problems.

III. Skills

The clerkship will provide opportunity to observe the delivery of treatment despite pressures from parents, community, etc.

IIIC 1. JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY DEVELOPING EFFECTIVE TREATMENT PLAN BY UTILIZING APPROPRIATE RESOURCES

GENERAL OBJECTIVES

I. Attitudes

The physician should be willing to
a. consider alternative treatment resources with due regard for availability, cost, varying degrees of skill and varying degrees of acceptance by patient and family;
b. accept treatment resources with appropriate level of supervision by M.D., i.e., willingness to delegate.

II. Knowledge and Understanding

The physician should
a. know usual community resources as well as special resources for special patients (e.g., CCD aid for congenital heart disease; aid to blind; vocational rehabilitation;
b. be aware of easiest (i.e., simplest and fastest) ways of obtaining aid.

III. Skills

The physician should be able to
a. effectively communicate with lay, paraprofessional and professional individuals in each area;
b. categorize patients so that appropriate resources may be found (e.g., when a partially sighted patient is legally "blind").

IIIC 1. JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY DEVELOPING EFFECTIVE TREATMENT PLAN BY UTILIZING APPROPRIATE RESOURCES

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes (See Note in IIIA)

The clerkship can contribute to the development of these attitudes by
a. requiring that cost, etc., be considered in each Rx decision;
b. contact with public health nurses, social workers, nutritionists, etc., will encourage the acceptance of others in therapeutic roles.

II. Knowledge and Understanding

The clerkship can provide reinforcement of previous information about agencies; demonstrating by example the utilization of resources.

III. Skills

The clerkship can provide direct contact with people other than responsible MD and should improve communication techniques by better understanding of roles.

IIIC 2. DEMONSTRATING JUDGMENT BY DEVELOPING AN APPROPRIATE TREATMENT PLAN WHICH CONSIDERS PATIENT'S SPECIAL NEEDS AND INTERESTS

GENERAL OBJECTIVES

I. Attitudes

The physician will

a. strive to tailor his treatment to the individual background of the patient;
b. avoid stereotyped plans which fail to take into account the special situation of each patient;
c. be aware of the effects of the patient's ethnic, racial, age, socio-economic status, sex, marital status, personality, etc., on the cost, benefit, risk elements of his treatment plan.

II. Knowledge and Understanding

The physician must have mastered Categories I-II in order to understand the nature of the patient and his complaint.

In addition, the physician also must

a. know the relationship between various patient background characteristics and therapeutic prognosis;
b. be thoroughly familiar with the pathophysiological and psycho-social consequences of the patient's problem and the therapy available;
c. be familiar with the resources available for treatment, and the costs, risks, and patient discomfort involved in various types of treatment.

III. Skills

The physician should be able to communicate with patients regarding the patients' special situation, e.g., their diagnoses, projected treatment plans, pain, risk, costs.

PIC 2. DEMONSTRATING JUDGMENT BY DEVELOPING AN APPROPRIATE TREATMENT PLAN WHICH CONSIDERS PATIENT'S SPECIAL NEEDS AND INTERESTS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

See Note in IIIA.

Students will gain the opportunity to observe the effects of variations in patient background on the impact of treatment and the tailoring of treatment to meet the particular needs of the patient especially as it relates to conditions in children.

II. Knowledge and Understanding

The students will gain reinforcement of their knowledge of physiology, pathology and therapeutics as they relate to the treatment of children, including the special problems presented by the immature organ system.

Additional exposure to the resources available for treatment of children will be made available. They will also gain insight into costs, therapeutic risks and patient discomfort as they relate to children.

III. Skills

They will receive practical experience in communicating with patients and families.

IIIC 3. JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY DEVELOPING AN EFFECTIVE TREATMENT PLAN BY ATTENTION TO PROPER SEQUENCING

GENERAL OBJECTIVES

I Attitudes

The physician should be willing to consider consequences of sequence of any treatment plan.

II. Knowledge and Understanding

The physician should be aware of pathophysiology and pharmacology of treatment modalities, (e.g., the consequences of surgery on GI track when patient has hypokalemic alkalosis).

III. Skills

He should demonstrate the ability to make judgments appropriately in planning Rx sequences.

IIC 3. JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY DEVELOPING AN EFFECTIVE TREATMENT PLAN BY ATTENTION TO PROPER SEQUENCING

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

See Note in IIIA.

The pediatric clerkship can demonstrate the consideration of the consequences of sequencing in discussing treatment of patients.

II. Knowledge and Understanding

Introduction and/or reinforcement in patient centered treatment plans.

III. Skills

Practical experience with multifactoral problems and necessity for numerous treatment modalities.

IIIC 4. JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY DEVELOPING EFFECTIVE TREATMENT PLAN BY SELECTING TREATMENT MOST APPROPRIATE TO LEVEL OF DIAGNOSTIC CERTAINTY

GENERAL OBJECTIVES

I. Attitudes

The physician will be willing to
a. modify treatment plan based on relative validity of diagnosis;
b. consider less definitive but reversible treatment;
c. accept responsibility for definitive treatment, even if relatively drastic, in situations of high diagnostic certainty.

II. Knowledge and Understanding

See Categories I and II.

The physician will know specifically which treatments go with which types of problems, and sources of information regarding treatment and problems.

III. Skills

All of I, II, and III A, B & C.

IIIC 4. JUDGMENT IN DECIDING ON APPROPRIATE PHYSICIAN INTERVENTION BY DEVELOPING EFFECTIVE TREATMENT PLAN BY SELECTING TREATMENT MOST APPROPRIATE TO LEVEL OF DIAGNOSTIC CERTAINTY

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes (See Note on IIIA)

Introduction and/or reinforcement in patient centered treatment plans.

II. Knowledge and Understanding

The clerkship will contribute to knowledge of pathophysiology and course of common diseases and conditions of children as it relates to their treatment.

III. Skills

The clerkship will provide opportunity to assist in Rx plan development and defense of Rx plan in relation to possible validity of diagnosis.

Question 1:

Does the design of the learning experience facilitate our reaching these objectives?

One of the great strengths of the design of clinical experiences is that they give the opportunity to the student to observe how clinicians decide on the management of large numbers of patients. In fact, the very richness and variety of the types of conditions treated in a large medical center may sometimes give the student a false impression of the nature of clinical medicine. Furthermore, the learning experiences are organized to assist the student in understanding the rationale behind many of the judgments made. The seminars and self-instructional materials are also designed to assist the student in understanding the types of judgments which must be made by knowledgeable clinicians in taking care of patients. The main weakness of the design is the same as that discussed under performance requirements in Chapter II. The student has little opportunity to demonstrate what judgments he might make since decision making is essentially a group process and the inadequate student has the opportunity to hide. Although the medical school's curriculum for teaching clinical judgment is generally accepted, there is considerable dissatisfaction with teaching emergency medicine. Many medical students are reluctant to graduate in three years because they feel inadequate in the management of emergency situations. For these students, the 48-week clinical core experience does not provide enough practice in dealing with emergency situations. This is a problem that goes far beyond pediatrics and involves the entire school and its decision as to what constitutes core curriculum.

Question 2:

If the design is sound, is it being implemented appropriately and effectively?

As in all teaching experiences, the implementation of the program depends upon the ability of faculty and house officers. The faculty in pediatrics takes a large responsibility in the ongoing teaching program and excessive reliance upon house officers as teachers is avoided. One weakness in implementation occurs during the times of the year when the number of patients entering pediatrics is very small. Although the dangers of too many patients are as great as having too few, it is still necessary to provide the students with some alternative learning experiences, when the number of patients is limited. One possible solution is the use of simulated patients or a retrospective review of management issues developed from the analysis of patient charts.

Question 3:

What evidence do we have that the program is meeting its objectives?

As in Category 2, it is difficult to find much evidence about the students' accomplishment of these objectives. The usual evaluation methods give insight into the student's mastery of the prerequisite information required, especially that in basic science. Many of the multiple choice questions deal with the characteristics of various treatment modalities and the appropriate treatment for various conditions. Little evaluation, however, is done of the student's ability to coordinate his intervention with the individual characteristics of the patient. The most promising technique for assessing these abilities is the oral examination given to the pediatric house officers in the Spring of 1973. Perhaps this technique could be adapted for use with medical students (see Part III).

Question 4:

What changes might be desirable as a result of this analysis?

The answer to this question in Part II, Chapter II, also applies here in that the greatest improvements would probably lie in the use of simulated patients or descriptions of patients' conditions for use both in teaching and evaluation. Attention to the problem of providing the student with more effective education in the management and treatment of emergency conditions is probably an issue that will have to be discussed and resolved by the entire clinical faculty.

CHAPTER IV

JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT

Introduction

The performance requirements in this chapter are, for the most part, learned during the clinical core learning experiences. A great many of the important principles regarding treatment are introduced in the medical and surgical clerkships, but the application of these techniques to the treatment of children is important in pediatrics. The judgment elements are similar to those discussed in Part II, Chapter III, and the comments made in that chapter also apply here. Likewise, there are a number of skills (e.g., medication, invasive techniques, counseling) in the performance requirements included in this chapter which are analogous to those discussed in Part II, Chapter I, and the comments there are appropriate here as well.

The answers to the questions posed on pages 31 and 32 in regard to the objectives discussed in this chapter are given in pages 92 and 93.

IVA 1. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT BY DEMONSTRATING ABILITY AT SURGICAL TECHNIQUE

GENERAL OBJECTIVES

I. Attitudes

The physician should
- a. demonstrate objectivity concerning the relative merits of medical vs. surgical approach;
- b. exhibit concern for the patient's physical and emotional comfort;
- c. be reluctant to initiate procedures of uncertain or limited therapeutic value;
- d. willing to act once problem is defined;
- e. pay attention to attitudes under VIA.

II. Knowledge and Understanding

The physician should
- a. be aware of the invasive treatment techniques and the most appropriate time for their introduction (see list B on page 77);
- b. know the circumstances or cluster of findings which indicate surgical intervention or more definitive diagnostic studies;
- c. know enough about overall experience with the commonly used procedures to weigh the risks involved against the expected gain (see list A on page 77);
- d. have the ability to recognize and deal with complications of surgical procedure;
- e. understand the relation of the surgical procedure to the patient's predicted course so as to select the most appropriate time for surgical intervention;
- f. understand the planned surgical intervention sufficiently to give a clear and appropriate explanation to patient or parent;
- g. be able to know and recognize adequate presurgical preparation.

III. Skills

The physician should
- a. be able to carry out certain emergency or generally used invasive techniques with dexterity, effectiveness, and minimal discomfort to patient, and
- b. be able to explain technique clearly.

IVA 1. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT BY DEMONSTRATING ABILITY AT SURGICAL TECHNIQUE

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should reinforce the attitudes described in General Objectives with special concern for influence of patient's age and maturity.

II. Knowledge and Understanding

The clerkship should develop

a. awareness of the clinical difference of surgical disease with age;
b. understanding of some of the circumstances and types of surgery developed to meet unique needs of children;
c. practical experience in problem solving which involves surgical decision making in children;
d. an understanding by the student of the immediate and long-term risks of surgical intervention vs. other management in children.

III. Skills

The clerkship should

a. reinforce diagnostic and selective capabilities;
b. provide practice in application of knowledge to some sick children;
c. provide experience in performing certain procedures (see list B on page 77).

List of commonly used procedures he would know about:

List A

1. Fractures
2. Head Injury
3. D & C
4. Appendectomy
5. Abdominal Exploration
6. T & A
7. Hysterectomy
8. Herniorrhaphy
9. Cong. Ht. Proc.
10. T-E Fistula Repair
11. Imperforate Anus
12. Pyloromyotomy
13. GI Atresia

List of procedures medical students should be able to accomplish at graduation:

List B

1. Tracheostomy
2. Paracentesis
3. Thoracentesis
4. Myringotomy
5. Incision and Drainage
6. Selected Simple Fractures
7. Surgical Removal of Superficial Skin Lesions (e.g., warts, cutaneous cysts)
8. Laceration
9. Hemostasis
10. Catheterization
11. Subdural Puncture
12. Vein Puncture and Cut Down
13. Uncomplicated Parturition
14. Cervical Biopsy
15. Skin Biopsy
16. Lymph Node Biopsy
17. Tracheal Intubation

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IVA 2. DEMONSTRATING JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT BY EFFECTIVELY PERFORMING COUNSELING INCLUDING INSTRUCTION WITH ADEQUATE SKILL

GENERAL OBJECTIVES

I. Attitudes

The physician should
- a. recognize the limited state of present knowledge in discussing treatment with patients;
- b. be aware of his own limitations and biases;
- c. possess a sense of empathy with his patient and family;
- d. possess respect for the dignity and individuality of the patient;
- e. be willing to recognize the place of non-physicians in counseling.

II. Knowledge and Understanding

The physician should
- a. possess an understanding of the values and background of the patient or family receiving counseling;
- b. know the principles of counseling;
- c. have a thorough knowledge of the condition about which counseling is centered and the relative reliability of the diagnosis;
- d. possess a general appreciation of the usual psychologic responses to counseling and be prepared to deal with these effectively;
- e. possess an understanding of the role non-professionals can play in counseling.

III. Skills

The physician should possess the ability to
- a. gain insight into the attitudes, ethical values and ethnic background of the patient and family;
- b. gain the patient's confidence and to communicate effectively with patient and family;
- c. use information so as to facilitate immediate patient care and long-term attitudes;
- d. translate medical terminology in a representative manner to assure full understanding by patient and parent.

IVA 2. DEMONSTRATING JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT BY EFFECTIVELY PERFORMING COUNSELING INCLUDING INSTRUCTION WITH ADEQUATE SKILL

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should

a. reinforce the attitudes listed under General Objectives;
b. increase the student's sensitivity to the far reaching consequences sometimes attendant to counseling by having him work with children and families;
c. increase his willingness to be firm yet selective in counseling by contact with children and families.

II. Knowledge and Understanding

The clerkship should provide

a. insight into the special problems inherent in counseling where the patient's potential for growth, development, or mental function is compromised;
b. understanding of the influence of maturation on function;
c. knowledge about unusual conditions or diseases which are more typical of the immature patient.

III. Skills

The clerkship should reinforce the student's ability to work with children and parents and transmit essential medical information in a professional and effective manner.

IVA 3a. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT AS DEMONSTRATED BY ABILITY TO SELECT AND CARRY OUT THE APPROPRIATE ROUTE OF ADMINISTRATION OF MEDICATION

GENERAL OBJECTIVES

I. Attitudes

The physician should be
a. sensitive to the patient's comfort as a factor in selecting method or route;
b. willing to adapt technique to individual patient situation;
c. alert to interference or synergism between medications or other therapy.

II. Knowledge and Understanding

The physician should demonstrate
a. understanding of the physiologic mechanisms and pharmacodynamics of medication prescribed so as to identify the most effective route, dose and frequency;
b. the ability to weigh the relative merits of related medications and procedures to best adapt to the specific patient's needs;
c. knowledge of side effects of treatment and methods used to minimize or avoid therapy;
d. knowledge of therapeutic compatibilities or conflicts.

III. Skills

The physician should be adept at initiating or carrying out the procedure most efficacious for a given form of therapy.

IVA 3a. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT AS DEMONSTRATED BY ABILITY TO SELECT AND CARRY OUT THE APPROPRIATE ROUTE OF ADMINISTRATION OF MEDICATION

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should
- a. reinforce attitudes under General Objectives, and
- b. increase the student's willingness to frequently re-examine appropriateness of method or route selected by contact with patients in which such re-examination is particularly important.

II. Knowledge and Understanding

The clerkship should
- a. reinforce knowledge and understanding of items in General Objectives as they apply specifically to infants and children;
- b. assist the student to understand the dynamics of treatment and the relation of form of medication or route of administration to efficacy, especially in children;
- c. provide knowledge of drugs or medications to which children respond differently.

III. Skills

The clerkship should reinforce skills under General Objectives as they apply to infants and children.

IVA 3b. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT AS DEMONSTRATED BY SELECTING AND CALCULATING APPROPRIATE DOSAGES OF MEDICATION

GENERAL OBJECTIVES

I. Attitudes

The physician should
- a. be aware of the consequences of dosage errors and strive to avoid such errors;
- b. be willing to critically examine and re-examine dosage calculations;
- c. be sensitive to an unusual response to medications.

II. Knowledge and Understanding

The physician should
- a. be able to correlate disease etiology with the established efficacy of therapeutic agents;
- b. know the basic pharmacodynamics of the medication selected or be aware of a source to provide this information;
- c. have specific reasons for selecting one medication and excluding others where several potentially useful agents exist.

III. Skills

The physician should be able to
- a. calculate dose in relation to mass of patient, and
- b. modify dose in relation to patient's altered metabolism.

IVA 3b. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT AS DEMONSTRATED BY SELECTING AND CALCULATING APPROPRIATE DOSAGES OF MEDICATION

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should

a. reinforce attitudes under General Objectives with special emphasis on drugs in the immature subject;
b. assist the student to appreciate the situations in which drug therapy is only symptomatic, especially in conditions affecting children;
c. reinforce the student's willingness to avoid drugs of unproven efficacy.

II. Knowledge and Understanding

The clerkship should

a. reinforce knowledge described under General Objectives;
b. provide the student with knowledge of the metabolism of drugs in children and the way this relates to selection and dose calculation;
c. provide the student with the ability to explain drug effect and side effects to patient and parents;
d. provide the student with information regarding when drug therapy should be modified, terminated or not initiated, especially in conditions of children.

III. Skills

The clerkship should provide introduction and/or reinforcement of these skills by presenting the student with situations when he observes and participates in the selection, calculation and administration of medications.

IVA 3c. JUDGMENT IN IMPLEMENTING TREATMENT AND SELECTING MEDICATIONS AS EVIDENCED BY RECOGNITION OF INDIVIDUAL PHARMACODYNAMIC VARIATIONS

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. willing to critically relate his knowledge of a medication to the individual patient;

b. cautious in medication orders and frequently reappraising the appropriateness of his plan.

II. Knowledge and Understanding

The physician should be able to assess the pathologic and physiologic parameters which will influence the body's response to a medication. This implies a knowledge of the normal and the unusual properties of the medication used and the symptoms permitting recognition of each.

III. Skills

The physician should have the ability to modify standard or usual medication schedules or forms to suit the needs of a patient with unique requirements.

IVA 3c. JUDGMENT IN IMPLEMENTING TREATMENT AND SELECTING MEDICATIONS AS EVIDENCED BY RECOGNITION OF INDIVIDUAL PHARMACODYNAMIC VARIATIONS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should provide the student with awareness that
- a. medications must be selected with due regard to age, maturity and physiologic status;
- b. reinforcement of the need for constant reappraisal.

II. Knowledge and Understanding

The clerkship should assist the student to know
- a. the expected level of function per size or mass to be expected in infants and children who are normal;
- b. the usual and qualitatively or quantitatively different adaptations of children to illness which influences drug metabolism;
- c. the fact that children differ in size, maturity, surface to mass relation, etc.

III. Skills

The clerkship should assist the student
- a. to gain experience in selecting dose schedules and medications in children with unique requirements;
- b. when appropriate, to observe the accuracy of his decisions.

IVA 4. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT BY THE IDENTIFICATION AND EFFECTIVE USE OF TREATMENT RESOURCES

GENERAL OBJECTIVES

I. Attitudes

The physician should be willing to

a. believe that there are multiple appropriate resources to supplement his own therapeutic efforts;
b. invest time and effort in identifying and relating the needs of his patient to other treatment resources;
c. investigate and, when appropriate, adopt or participate in new treatment resources;
d. play a coordinating and advocate role when other treatment resources are used.

II. Knowledge and Understanding

The physician should possess

a. knowledge of treatment resources available in his environment and in the environment of the patient;
b. knowledge of how to effectively communicate the patient's needs to other treatment resources;
c. sufficient understanding of how other treatment resources function to effectively integrate them into his patient's care.

III. Skills

The physician should possess the ability to

a. communicate with other treatment resources regarding specific treatments and long term plans for patient care;
b. coordinate patient's care to ensure an effective program from both the physician's and the patient's point of view.

IVA 4. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT BY THE IDENTIFICATION AND EFFECTIVE USE OF TREATMENT RESOURCES

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should introduce and/or reinforce those listed under General Objectives.

II. Knowledge and Understanding

The clerkship should introduce and/or reinforce those listed under General Objectives.

In addition, pediatrics should emphasize those resources more likely to be involved in child care (MR treatment centers, CP treatment centers, speech and hearing programs, physiotherapy, remedial learning centers etc.).

III. Skills

The clerkship should increase the student's ability to

a. motivate his patient to utilize other resources to complement his treatment;
b. communicate patient's needs and physician's concerns clearly to other therapeutic resources.

IVB. JUDGMENT AND SKILL IN MONITORING AND EVALUATING THE EFFECTS OF TREATMENT

GENERAL OBJECTIVES

I. Attitudes

The physician should be willing to

a. accept the fact that his plan of treatment should be monitored and evaluated;
b. respond to indications for change in treatment plan;
c. include appropriate monitoring and evaluation in all treatment plans.

II. Knowledge and Understanding

The physician must know

a. the ways in which a particular condition or treatment can be most appropriately monitored and evaluated;
b. the normal limits of variation in response and what response from treatment to expect;
c. enough about the natural history of disease to make judgments concerning continuing or cessation of treatment.

III. Skills

The physician must possess skill in

a. the manipulation of monitoring and evaluation techniques and equipment;
b. interpreting the meaning of information from monitoring and evaluation to his patient.

IVB. JUDGMENT AND SKILL IN MONITORING AND EVALUATING THE EFFECTS OF TREATMENT.

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should assist the student in realizing the relationship between monitoring, evaluation and prevention as closely allied functions, and increase his appreciation of this activity as a method of anticipating or preventing problems, especially those in children.

II. Knowledge and Understanding

The clerkship should increase the student's knowledge and understanding of
a. techniques for monitoring for growth, development, maturation and the guidelines for their use;
b. unusual patterns of response of children to treatment programs;
c. the natural history of disease conditions in the immature subject.

III. Skills

The clerkship should improve the student's ability to apply his knowledge of monitoring and evaluating treatment generally to the specific situations presented by immature subjects.

IVC. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT AS EVIDENCED BY PROVIDING LONG TERM CARE

GENERAL OBJECTIVES

I. Attitudes

The physician should

a. recognize that the physician's role does not terminate with acute care or initial response of patient;
b. recognize the emotional demands on the physician who cares for the chronically ill patient;
c. be conscientious in following patient for reactivation or persistence of disease or defect;
d. be willing to integrate his role in care with that of other community resources needed by his patient;
e. recognize that the physician has an obligation to effectively educate his patient for long term care and maintenance of health.

II. Knowledge and Understanding

The physician should possess

a. an understanding of the natural history of disease and the changes induced by treatment;
b. knowledge of the most effective way to maintain surveillance of the particular patient's problem.

III. Skills

The physician should be able to effectively communicate with his patient or the patient's family so as to assure effective and appropriate transfer of information, skills, attitudes and expectations.

IVC. JUDGMENT AND SKILL IN IMPLEMENTING TREATMENT AS EVIDENCED BY PROVIDING LONG TERM CARE

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship should reinforce those listed under General Objectives in the unique areas of pediatrics.

II. Knowledge and Understanding

The clerkship should

a. provide specific pediatric examples of long term disease management skills;
b. provide information on the role of family and of family-child interaction;
c. assist the student to become aware of how the child's perception of his condition will change as the child matures.

III. Skills

Reinforce those listed under General Objectives.

Question 1:

Does the design of the learning experience facilitate our reaching these objectives?

The clinical clerkship experiences in pediatrics are designed to provide the student with opportunities to observe treatment, to participate in judgments regarding treatment, and to provide treatment to patients when appropriate to his skill and level of understanding. These are perhaps most vigorously tested in the outpatient clinic where he is given the opportunity to design the treatment program on his patient and then to receive immediate feedback regarding the effectiveness of his suggestions. While the design seems to be basically sound, some of the treatment modalities are experienced much more thoroughly than others. Furthermore, the feedback is episodic in nature, and as in the case of performance requirements in Category I, the student can often remain anonymous within the group which is making decisions.

Another problem in the design is lack of prolonged contact with individual patients. This inhibits the teaching of rehabilitation and long-term care. This problem may be alleviated by a vigorous and well-maintained record system which at least assists the student in seeing where his actions fit in the continuum of care being provided to the patient. Perhaps the problem is unsolvable and the student must learn about long-term care and rehabilitation in his graduate medical education experience.

Question 2:

If the design is sound, is it being implemented appropriately and effectively?

As was stated in the other chapters, difficulties in implementation relate to the varying ability of faculty and house officers to relate to students and the lack of specific objectives and appropriate feedback. At times, using the present instructional methodology, there is a shortage of patients in the pediatric service.

Question 3:

What evidence do we have that the program is meeting its objectives?

The cognitive knowledge of the students seems to be in line with what one would expect of students of their ability, and the students themselves believe that they have reached acceptable levels of skills by the end of the clinical core year. We have not yet attempted to measure specific skills as rigorously as we could.

Question 4:

What changes might be desirable as a result of this analysis?

The earlier answers to this question apply here as well. Particularly important is the need to specify in detail the treatment skills that must be mastered by the student and to develop settings in which these skills may be assessed.

It would also be desirable to enlist the cooperation of the other clinical departments to ensure that the Department of Pediatrics reinforces what is taught elsewhere, and that the student does not complete his clinical core experience with a fragmented approach to understanding the problems of treatment.

Finally, some attempt should be made to deal with problems of the teaching of rehabilitation and long-term care, using case histories, simulated patients, etc.

CHAPTER V

ACCEPTING RESPONSIBILITY FOR HEALTH MAINTENANCE

Introduction

When we consider the performance requirements in regard to maintenance, we move from the main stream of physician education, which seems to be oriented towards a view of the role of physician as the one who responds to patient's complaints and tries to deal with them on an individual basis, to the physician as the resource of the community who is responsible for prevention of disease and maintenance of health. The years that the student spends studying biological science tend to reinforce a mechanical model of physician behavior. The human body is conceptualized as an especially intricate machine, and the physician's task is seen as intervening when the machine is malfunctioning to repair it. An ecological model of health in which individual human beings and human communities are seen as part of a complex ecosystem is alien to the typical medical student and perhaps to most of the medical school faculty with whom he comes in contact. There are two basic science courses which attempt to improve the student's understanding of his role in the community and the need for preventive medicine. These are the Introduction to Patient Evaluation and Preventive Medicine and Community Health. The Introduction to Patient Evaluation course assists the student to understand how to relate to patients from a variety of backgrounds and characteristics and develops in him insight into human growth and development, and the relationship between the patient's life cycle and his needs for prevention and treatment of illness. The course in Preventive Medicine and Community Health introduces the students to such concepts important in community health as screening, environmental health, epidemiology and prospective medicine.

The faculty for these courses is drawn primarily from the physicians and basic scientists in the Department of Preventive Medicine and Community Health, Family Medicine, Psychiatry and Pediatrics. Progress, at times, has been slow, possibly due to the overwhelming pressure of the traditional medical school courses given during the basic science years. The Department of Pediatrics, through its emphasis on ambulatory medicine and the need for health maintenance activities in regard to the care of children, is one of the principal clinical learning experiences in the core curriculum which deals with problems of health maintenance,

along with significant contributions made by the Departments of Psychiatry and Obstetrics and Gynecology. Whether the problems of community health are dealt with adequately in the medical school curriculum is a larger issue which probably deserves some school-wide discussion and implementation.

The answers to the questions posed on pages 31 and 32 in regard to the objectives discussed in this chapter are given in pages 108 and 109.

VA 1. ACCEPTING RESPONSIBILITY FOR INDIVIDUAL HEALTH MAINTENANCE BY ESTABLISHING SCREENING PROCEDURES

GENERAL OBJECTIVES

I. Attitudes

The physician should

a. be concerned about the maintenance of the health of individuals under his care or influence and should, in his practice, apply such procedures;

b. urge individuals to use screening procedures, and encourage the institutions he is associated with to maximize the opportunity of patients to avail themselves of such opportunities.

II. Knowledge and Understanding

The physician should

a. have sufficient knowledge of the natural history of disease, pathophysiology, and psycho-social functioning to be able to decide the particular patients who would be most likely to profit from screening procedures;

b. also know the strengths and weaknesses and the sources of error of the screening methods given on the list below:

1. Chest X-ray
2. TB test
3. Blood pressure
4. Urinalysis
5. Urine culture
6. Sickle cell and G6PD
7. Pap smear
8. Hemogram
9. Intraocular pressure
10. Hearing and visual acuity
11. EKG
12. PKU and other amino-aciduria
13. Psychometrics
14. Height and weight assessment and growth chart
15. Mucopolysaccharidases

III. Skills

He should have mastered the technique of administering simple screening tests, e.g., Clinitest, so that he can, when appropriate, administer these tests himself, or train others to do so.

VA 1. ACCEPTING RESPONSIBILITY FOR INDIVIDUAL HEALTH MAINTENANCE BY ESTABLISHING SCREENING PROCEDURES

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

Pediatrics can reinforce the concepts introduced by the course in Preventive Medicine and Community Health focusing on health maintenance as it relates to children.

Student contact with some screening programs sponsored by the Pediatric Department would be especially helpful.

II. Knowledge and Understanding

The clerkship should provide reinforcement of previous learning, but special emphasis on tests used for screening newborn, infants, children and adolescents. See list under General Objectives.

III. Skills

The clerkship should assist the student to learn to administer those tests generally given to children by physicians, e.g., psychometrics.

VA 2. ACCEPTING THE RESPONSIBILITY FOR INDIVIDUAL HEALTH MAINTENANCE BY ESTABLISHING IMMUNIZATION PROCEDURES

GENERAL OBJECTIVES

I. Attitudes

See VA 1 with the addition that the physician should strive to encourage individuals to obtain needed immunizations and institutions to provide opportunities for such immunizations.

II. Knowledge and Understanding

See VA 1 with the addition that the physician should know and understand the mechanisms of immunology so that he is aware of the strengths and weaknesses of various immunological procedures and alert to advances in the field of immunology.

III. Skills

The physician should be able to use appropriate technique in administering immunizations.

VIA 2. ACCEPTING THE RESPONSIBILITY FOR INDIVIDUAL HEALTH MAINTENANCE BY ESTABLISHING IMMUNIZATION PROCEDURES

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

See VA 1.

The pediatric course should reinforce these attitudes by the specific opportunities offered by the clerkship for observing optimum use of immunizations for children.

II. Knowledge and Understanding

See VA 1.

The clerkship should provide reinforcement which will include special emphasis on the advantages of immunizations in the health maintenance of children.

III. Skills

The clerkship will provide introduction and/or reinforcement of immunization technique.

VA 3. ACCEPTING THE RESPONSIBILITY FOR INDIVIDUAL HEALTH MAINTENANCE BY MINIMIZING ENVIRONMENTAL HEALTH HAZARDS

GENERAL OBJECTIVES

I. Attitudes

The physician should
a. have a strong commitment to minimize environmental health hazards for individuals;
b. strive at every opportunity to educate the patients under his care or influence to the dangers of environmental hazards.

II. Knowledge and Understanding

The physician should possess
a. knowledge of the major environmental health hazards, particularly poisonings, accidents and pollution and the particular actions that individuals can take to minimize such hazards;
b. understanding of the effects of poisoning and pollution on physiological functioning.

III. Skills

The physician should be able to counsel patients regarding environmental health hazards.

VA 3. ACCEPTING THE RESPONSIBILITY FOR INDIVIDUAL HEALTH MAINTENANCE BY MINIMIZING ENVIRONMENTAL HEALTH HAZARDS

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

The clinical experience in pediatrics should reinforce the student's commitment to prevention of poisoning and accidents in children.

II. Knowledge and Understanding

The pediatric clerkship should provide the student with specific knowledge of the chief environmental health hazards to children and the consequences of neglect of these hazards.

III. Skills

The pediatric clerkship should provide opportunity to observe and practice counseling families regarding environmental health hazards.

VA 4. ACCEPTING RESPONSIBILITY OF HEALTH MAINTENANCE OF INDIVIDUALS BY EVALUATING GROWTH AND DEVELOPMENT

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware of the key role he can play in monitoring the physiological and psychological development of children and should strive to maximize this role in the patients he cares for or influences.

II. Knowledge and Understanding

The discussion of the objectives and categories in VA 1 are particularly pertinent in describing the objectives for this category as well.

The physician should know the sequence of physiological and psychological growth and development and normal variations from these sequences in order that he can be of maximum assistance in the early detection of a disease and the prevention of illness before it becomes serious.

III. Skills

The physician should be able to talk to families and children and possess the requisite information gathering abilities described in category VA 1.

VA 4. ACCEPTING RESPONSIBILITY OF HEALTH MAINTENANCE OF INDIVIDUALS BY EVALUATING GROWTH AND DEVELOPMENT

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

The pediatric clerkship offers the best opportunity for reinforcement of these attitudes during the student's medical school career.

II. Knowledge and Understanding

Since earlier introduction to the specific knowledge of how to take a developmental history was limited, the pediatric clerkship must play a major role in assisting the student to develop this ability.

In developing his ability, the student will, of course, tap into his basic understanding of physiological and psychological functioning.

III. Skills

See discussion in category VA 1.

VA 5. ACCEPTING RESPONSIBILITY FOR HEALTH MAINTENANCE BY ANTICIPATING AND COUNSELING IN REGARD TO HEALTH PROBLEMS

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware of the

a. key role he can play in health maintenance by being alert to threats to health caused by stress, improper diet, use of drugs, lack of attention to needed rest, etc., and

b. role of heredity in causing illness and disability, and be alert to opportunities to provide genetic counseling. He should also strive to counsel patients under his care or influence in order to assist them in avoiding or minimizing these problems.

II. Knowledge and Understanding

The physician should

a. have sufficient understanding of pathology and psychopathology to be aware of the relationships between the "life style" threats to health described above and various disease processes;

b. know which methods of dealing with these problems are most effective, and with patients possessing multiple health problems, the priority in which he should seek to alleviate such problems;

c. have some knowledge of the relationships between the patient's socio-economic status, age, race and ethnic origin and health problems. This knowledge should enable him to be able to judge the most appropriate counseling to give to each patient and to decide on the most important problems to emphasize;

d. understand the transmission of hereditary defects, and be familiar with the sources of specific information regarding such defects.

III. Skills

See category VA 1. In addition, the physician should be able to counsel accurately and effectively patients and families.

VA 5. ACCEPTING RESPONSIBILITY FOR HEALTH MAINTENANCE BY ANTICIPATING AND COUNSELING IN REGARD TO HEALTH PROBLEMS

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

See VA 4.

Experience in pediatrics should reinforce attitudes in regard to drug abuse in children, nutrition and other dietary problems, and hereditary influences.

II. Knowledge and Understanding

The pediatric clerkship should provide information and understanding of items described in General Objectives, particularly as they relate to children.

Emphasis should be placed on psycho social threats to health from family environment and problems of nutrition, and problems of heredity.

III. Skills

The clerkship should provide reinforcement of abilities listed in General Objectives with emphasis on skills associated with counseling families.

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VB 1. ACCEPTING RESPONSIBILITY FOR HEALTH MAINTENANCE IN REGARD TO COMMUNITY HEALTH BY ENCOURAGING THE DEVELOPMENT OF SCREENING PROGRAMS

GENERAL OBJECTIVES

I. Attitudes

The physician should

a. be sufficiently concerned about community health care to strive to keep up with the latest information on the effectiveness of mass screening procedures, and

b. be willing to lend his support when appropriate to the development of such procedures.

II. Knowledge and Understanding

See VA 1.

In addition, the physician should be aware of the problems involved in administering such screening programs and in motivating those most susceptible to participate.

III. Skills

The physician should be able to instruct others regarding the administration of such techniques when appropriate.

VB 1. ACCEPTING RESPONSIBILITY FOR HEALTH MAINTENANCE IN REGARD TO COMMUNITY HEALTH BY ENCOURAGING THE DEVELOPMENT OF SCREENING PROGRAMS

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

Student contact with community health programs sponsored by the Department of Pediatrics would be especially helpful in developing these attitudes.

II. Knowledge and Understanding

See VA 1.

In addition, the clerkship can give insight into the problems of administering mass screening programs.

III. Skills 01000

See VA 1.

VB 2. ACCEPTING THE RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY SUPPORTING PREVENTIVE MEDICINE PROGRAMS

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware and concerned about preventive medicine and be willing to lend his support to methods of promoting preventive medicine.

II. Knowledge and Understanding

The physician should know about the

a. threats to community physical and mental health from such factors as lack of immunizations, prevalence of infectious diseases such as TB and VD, improper sanitation, overcrowding, family incapacities which may result in such conditions as abused and neglected children, drug abuse, etc.;

b. the most successful methods developed to alleviate these problems, and the agencies developed by communities to deal with these problems, e.g., community mental health clinics, school health services, community health departments, voluntary organizations, etc.

III. Skills

The physician should be skilled in communicating with individuals and groups regarding preventive medicine problems.

VB 2. ACCEPTING THE RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY SUPPORTING PREVENTIVE MEDICINE PROGRAMS

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

Pediatrics can help develop these attitudes by having students meet patients whose illnesses are a consequence of neglect of community health problems.

Involvement with the department's preventive medicine programs will also help develop these attitudes.

II. Knowledge and Understanding

Reinforcement of previous learning. In addition, pediatrics can provide information on community resources which affect children, e.g., school health services and diseases which are prevented by immunization.

III. Skills

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Practice in communicating with families will assist in learning how to communicate in regard to preventive medicine problems.

VB 3. ACCEPTING THE RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY SUPPORTING LIMITATION OF ENVIRONMENTAL HEALTH HAZARDS

GENERAL OBJECTIVES

I. Attitudes

See VA 3. In addition, the physician should be aware of the role that physicians can play in mobilizing the community in curtailing environmental health hazards and should be willing to meet these reponsibilities when appropriate conditions arise.

II. Knowledge and Understanding

See VA 3. In addition, the physician should be acquainted with community health agencies, responsible for correcting environmental health hazards and be aware of the contributions he can make to assist them in the effective performance of their duties.

III. Skills

The physician should be able to communicate with community organizations and governmental agencies regarding environmental health hazards.

VB 3. ACCEPTING THE RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY SUPPORTING LIMITATION OF ENVIRONMENTAL HEALTH HAZARDS

SPECIFIC OBJECTIVES FOR PEDIATRICS

I. Attitudes

The pediatric clerkship can assist the student to develop these attitudes by exposing him to the activities of pediatricians in the elimination of health hazards, the development of protective legislation, and the conduct of research in community health hazards.

II. Knowledge and Understanding

The students will gain information about a number of community health agencies especially those which deal with children such as public health nursing.

III. Skills

The pediatric clerkship will provide opportunities for students to practice communication skills.

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VB 4. ACCEPTING RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY ENCOURAGING PUBLIC HEALTH EDUCATION PROGRAMS

GENERAL OBJECTIVES

I. Attitudes

The physician should be willing to accept the concept that he has some responsibility to contribute to the health of the community through public health education programs, and be willing to meet these responsibilities when appropriate circumstances arise.

II. Knowledge and Understanding

The physician should possess knowledge and understanding of

a. the conditions that can be significantly alleviated by public understanding. These include diet, mental health, accidents and conditions involving human sexuality;

b. the agencies which exist to provide public health education and the role he can play in assisting them.

III. Skills

The physician should be able to participate effectively in public health education programs.

VB 4. ACCEPTING RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY ENCOURAGING PUBLIC HEALTH EDUCATION PROGRAMS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Emphasis on well baby care in pediatrics may help develop attitudes concerning community health. Furthermore, exposure to the consequences of lack of public understanding as it relates to the condition of children may help lead to the development of such attitudes.

II. Knowledge and Understanding

Exposure to the individual health problems arising from ignorance of patient's, e.g., diet, may assist the student to understand the importance of public health education.

III. Skills

It is unlikely that skill of this type will be developed very much by any of the clinical clerkships. Practice at talking to patients and families may make some contribution to the development of these abilities.

VB 5. ACCEPTING THE RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY ENCOURAGING THE MOST EFFECTIVE METHODS OF HEALTH CARE DELIVERY

GENERAL OBJECTIVES

I. Attitudes

See VB 4.

The physician should strive to be objective in reviewing the merits of the health care delivery system despite the effect of proposed systems on his income.

II. Knowledge and Understanding

The practicing physician should be aware of the health resources available in his community and the blocks to their most effective utilization. The knowledge of the undifferentiated physician should include knowledge of the general strengths and weaknesses of the present system and the various legislative systems being discussed. He should know the possible effects of these proposed solutions on the type of practice that he may undertake.

III. Skills

None.

VB 5. ACCEPTING THE RESPONSIBILITY FOR COMMUNITY HEALTH MAINTENANCE BY ENCOURAGING THE MOST EFFECTIVE METHODS OF HEALTH CARE DELIVERY

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship can provide

a. exposure to the individual patient complaints which are exacerbated by inefficient and ineffective use of resources which can lead to development of these attitudes;

b. exposure to various community clinics which can provide models of utilization of health resources.

II. Knowledge and Understanding

None

III. Skills

None

Question 1:

Does the design of the learning experience facilitate our reaching these objectives?

The core pediatric experience is perhaps the main method used by The University of Texas Medical Branch to reach certain of these objectives. These include screening tests for children, immunization procedures, health hazards to children especially accidents and poisonings, evaluation of growth and development, and anticipating and counseling parents in regard to the health care of children. There is little included in the medical school curriculum on community health although psychiatry deals with some of the problems of community and mental health, pediatrics in school health and obstetrics in some of the problems of maternal nutrition and health. The design weakness in the curriculum in regard to community health is something that cannot be alleviated by a single department. The elective track programs do provide students with opportunity for gaining insight into office practice, and preventive medicine and community health concerns, but the number of students who pursue such track segments in these areas is small compared to the number graduating from the entire medical school.

Question 2:

If the design is sound, is it being implemented appropriately and effectively?

As was mentioned earlier, part of the design is unsound. There are weaknesses in the present design and, of course, these weaknesses are obvious when one reviews the implementation of the curriculum. The usual problems of variation in faculty and house officer interest and ability exist in this area as in others. A further problem is that the ambulatory clinic and community experiences where many of the objectives regarding this performance requirement are taught may not be able to cover all of the objectives to be dealt with in that setting. Students in the out-patient clinic are mainly concerned about their skills of gathering information. Furthermore, the contact with patients is episodic, as is the case in teaching rehabilitation and long-term care. Improved record keeping may assist the student in learning where he fits into the health maintenance system of the patient. The long-term relationship between physician and patient which is needed to develop the health maintenance interests of physicians is only available in graduate medical education programs.

Question 3:

What evidence do we have that the program is meeting its objectives?

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The medical students do about as well on cognitive tests of prerequisite knowledge (e.g., pediatric comprehensive, preventive medicine portion of National

Boards) as would be expected from their general abilities. Although concrete data is unavailable, most sophomore medical students have negative attitudes regarding the health maintenance functions of physicians, and it does not seem that the clinical core experience alters these attitudes greatly.

Question 4:

What changes might be desirable as a result of this analysis?

The self-instructional materials distributed to the medical students during the pediatric clerkship already cover many important areas in health maintenance such as nutrition, infant nutrition and immunizations. It may be appropriate to develop more such self-instructional units to emphasize and reinforce the student's interest in health maintenance.

The present ambulatory clinic is a mixture of a diagnostic clinic and a continuing care clinic. These two types of clinics might well be separated since the role the students play in each type is different. The Department is presently reviewing the ambulatory clinic experiences in pediatrics to see if ways can be found to improve the effectiveness as a learning experience for both students and house officers.

The desirability of increasing student awareness about health maintenance for individuals and communities is not just the concern of the Department of Pediatrics, it is a problem which needs to be explored by the entire faculty.

CHAPTER VI

EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN

Introduction

The format of this handbook may lead the reader to think that each of the performance requirements are independent descriptions of behavior separate from other behaviors. This is not true. Any given activity performed by the physician cuts across several performance requirements. The reason for discussing the performance requirements as if they were independent is to assist the reader in planning instruction and evaluation methods. Nowhere is the interaction among performance requirements more apparent than in those discussed under Category VI. Most of the behaviors (e.g., recognizing professional capabilities and limitations) are manifested in the day-to-day management of patients with some few exceptions (e.g., accepting general responsibility to the community). However, unlike the early chapters which deal with the ability to manage patient care appropriately, this chapter deals with the willingness to manage patient care appropriately.

At this point, the reader might wish to review the comments on attitudinal learning on pp. 16 - 19, of Part I, Chapter III.

The process of molding the attitudes of medical students starts before they enter medical school since they must compete vigorously to obtain admission. As was discussed in Chapter V, the basic science experiences, with the exception of the courses in Preventive Medicine and Community Health and Introduction to Patient Evaluation, emphasize a mechanical view of medical practice and de-emphasize the physician's role as a counselor. Furthermore, the need for health maintenance for individuals and communities is rarely grasped by the student. While theoretically, the physician-student-patient relationship in a clerkship should provide an ideal setting for role modeling, the house officers and faculty are sometimes ineffective models. Furthermore, the academic, secondary and tertiary care oriented in-hospital, indigent patient setting may not be the best environment to produce effective models for primary physicians.

Some specific comments on some of the individual performance requirements under Category VI:

1009

Category VI-A. Recognizing Professional Capabilities and Limitations

The major problem with reaching this performance requirement lies in the fact that role models may not be appropriate. With the exception of the sub-objective "being assertive regarding his own abilities," there are few rewards for appropriate behaviors. There are few rewards for the student identifying his own strengths and weaknesses since the exposure of weaknesses is usually punished by disapproval.

Category VI-B. Accepting the Necessity of Maintaining Professional Competence

Nationwide discussions concerning the maintenance of professional competence by the physician are increasingly common, stimulated largely by the Millis Report. This report emphasized that the physician's role is so critical to the well-being of the public that it is essential that the public be provided substantial evidence of his continuing competency throughout his years of practice. Long before the current discussions, educators and professional societies recognized the importance of the maintenance of professional competence and have designed and implemented a wide variety of programs. The majority of these are in the nature of either media for spontaneous self-use or courses in which the physician is a passive student. Though relatively few well-designed studies have been conducted to determine the effectiveness of existing programs, the fragmentary evidence which has been accumulated suggests that virtually all models are remarkably ineffective in changing the physician's day-to-day performance.

Against this background, the role of the medical school in providing role models and situations designed to assist the future physician to develop attitudes appropriate to maintenance of competence becomes extremely pertinent. While the day may come when laws require intermittent licensure for the physician to practice, hopefully when our students receive their M.D. degree, they will already have acquired those habits of self-responsibility which make legal persuasion unnecessary. Since the practicing physician will have the continuous stimulation of encountering patients with medical problems to be solved, a major step in the direction of self-responsibility will be to develop in the student a deep respect for the necessary limits of his own knowledge and competence. He must be able to appreciate the rapid decay of his current knowledge and abilities as well as the role which changing social and ethical attitudes play in obsolescence of his professional competence. Appropriate, too, will be the need to establish in the student the conviction that he can economically afford to spend part of his professional time in self-instruction and competency maintenance. Many of these attitudes must be contributed by the role models provided by his teachers and colleagues.

In the more concrete area of knowledge and understanding, it will be important to bring the student into contact and experience with efficient and convenient methods for updating his knowledge and skills. This must include not only sources and

techniques but also an emphasis on the role medical and non-professional personnel of his own community can play in assisting him to maintain a high quality of medical practice.

Since the main method of developing appropriate attitudes in the student is to allow him to play a role and reinforcing appropriate behavior in that role, it is evident that medical schools must be places where the student has a large responsibility for his own education. The faculty and house officers should see their role as evaluating student progress and assisting the student in the application and assimilation of the knowledge and skills he acquires. If this is done, then, from the beginning of his professional life, he will have taken self-responsibility. It is perhaps a fault of the protected environment of the medical school that the teacher too often finds it easier to teach the student than to assist the student to learn.

Nevertheless, the protected environment of the medical school is not likely to encourage the student to be a self-learner when he leaves the school, whereas self-responsibility may establish this habit as a life style for the practicing physician.

Category VI-D. Relating Effectively to Patient and Family

This performance requirement is mainly taught by modeling. The student is not given much feedback regarding the effectiveness of his behavior (see comments on history taking). The development of the Introduction to Patient Evaluation course may alleviate this problem.

Category VI-E. Relating Effectively to Medical Personnel

Socialization of the medical student requires learning appropriate attitudes toward nurses, nurses' aides, etc. Some of the attitudes learned are less than positive. It would be valuable to determine if the clerkship changes students in the desirable direction. Attitudes toward physician assistants and nurse practitioners are of particular importance.

No one has explored whether or not students know the functions and capabilities of other health personnel and are familiar with some basic principles of supervision and human relations.

The answers to the questions posed on pages 31 and 32 in regard to the objectives discussed in this chapter are given in pages 131 and 132.

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VI A. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RECOGNIZING HIS PROFESSIONAL CAPABILITIES AND LIMITATIONS

GENERAL OBJECTIVES

I. Attitudes

The physician should be deeply committed to alleviating his patient's problems, by himself if necessary or desirable, but with the assistance of others when that course is best for the patient. He, therefore, should

a. strive to identify his own strengths and weaknesses;
b. be resistant to the lure of ego gratification;
c. be resistant to the urgings of colleagues and patient;
d. be assertive regarding his own abilities and skills;
e. be willing to seek advice;
f. be willing to accept responsibility for his own decisions and actions;
g. be willing to delegate responsibility and authority when appropriate.

II. Knowledge and Understanding

The physician will be thoroughly versed in Categories I through III so that he will know the requirements of clinical procedures, and the abilities in Category VIB so that he knows how to analyze his strengths and weaknesses.

III. Skills

He will be skilled at communicating to others his decisions regarding the appropriate delegation of tasks. He also should be skilled at self-assessment procedures.

VIA. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RECOGNIZING HIS PROFESSIONAL CAPABILITIES AND LIMITATIONS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship programs by providing the student with experience with the complexities of actual patient problems can begin to assist him to realize the need for collaborative efforts in delivering effective patient care. The methods used for evaluating him can begin to focus his attention on his self-evaluation and relieve him of the dependence on external evaluation systems.

II. Knowledge and Understanding

See Categories I - III and VIB.

III. Skills

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Student will gain some reinforcement of patient communication skills.

VIB 1a. DEMONSTRATING ACCEPTANCE OF NEED TO MAINTAIN COMPETENCE BY SCHEDULING ATTENDANCE OR PARTICIPATION IN EDUCATIONAL ACTIVITY

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. aware of his need for maintaining his competence;
b. willing to schedule time for increasing his competence as part of his commitment to his occupation.

II. Knowledge and Understanding

The physician should be knowledgeable about the

a. various resources available for maintaining his skills;
b. methods he can use to get the most out of the educational activity that is available to him.

III Skills

The physician should be skilled at

a. organizing his work so that he is able to leave adequate time for continuing educational activity;
b. attending to educational activity, either by reading, or observing, or participating in group interactions so that he gets the most out of these experiences.

VIB 1a. DEMONSTRATING ACCEPTANCE OF NEED TO MAINTAIN COMPETENCE BY SCHEDULING ATTENDANCE OR PARTICIPATION IN EDUCATIONAL ACTIVITY

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Exposure to contact with clinical patients will assist the student in gaining insight into the many unsolved problems of delivering medical care, and the obvious need for the clinician to maintain his competencies. These attitudes will be especially reinforced as they relate to problems in the treatment of children.

II. Knowledge and Understanding

The pediatric clerkship will introduce the student to some of the learning activities available for those wishing to keep up with pediatric knowledge. Participation in rounds and departmental seminars will also assist in developing some of this knowledge.

III. Skills

The clerkship will provide opportunity for the student to practice these skills, but see note below.

NOTE: The relatively unstructured nature of learning in the clerkship program can assist the student to develop these competencies. The effectiveness of the clerkship in doing so will depend somewhat upon the organization of the curriculum so that the student will begin to become aware of how he can and must schedule time so that he will have the opportunity to improve his competencies while at the same time taking care of patients.

VIB 1b. DEMONSTRATING ACCEPTANCE OF THE NECESSITY FOR MAINTAINING PROFESSIONAL COMPETENCE BY MEANS OF DEVELOPING METHODS OF SELF-EVALUATION AND IMPROVEMENT BY GATHERING AND UTILIZING REFERENCE MATERIALS

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware of his need for maintaining his competence and he, therefore, should devote part of his time to gathering resource reference materials and utilizing these materials appropriately and effectively as part of his professional practice.

II. Knowledge and Understanding

The physician should possess knowledge and understanding of the

a. various reference materials available;

b. the situations in which reference to these materials is essential.

III. Skills

The physician should be skilled at obtaining appropriate and valid information from reference materials.

VIB 1b. DEMONSTRATING ACCEPTANCE OF THE NECESSITY FOR MAINTAINING PROFESSIONAL COMPETENCE BY MEANS OF DEVELOPING METHODS OF SELF-EVALUATION AND IMPROVEMENT BY GATHERING AND UTILIZING REFERENCE MATERIALS

SPECIFIC OBJECTIVES OF PEDIATRICS

See note on VIB 1a.

I. Attitudes

The pediatric clerkship offers great opportunities for the student to have these attitudes reinforced, especially as they relate to reference materials involving children. This will not come about unless the faculty organizes student contact in this fashion.

II. Knowledge and Understanding

The pediatric clerkship should provide new information regarding the most appropriate reference sources for information regarding the normal growth and development of children, the diseases that are particularly important in children and the situations in the care and treatment of children in which attention to reference sources would be particularly appropriate.

III. Skills

The pediatric clerkship offers great opportunities for reinforcing these skills, especially those relating to the care and treatment of children.

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VIB 2. DEMONSTRATING ACCEPTANCE OF THE NECESSITY OF MAINTAINING PROFESSIONAL COMPETENCE BY MAINTAINING AN ATTITUDE OF INQUIRY

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware that the skills, ability and attitudes that he has upon the completion of his formal medical education will be inadequate to demands of the future practice of his profession, and he should, therefore,

a. always be open to new ideas and be striving to avoid stereotyped responses to familiar problems;
b. while certainly not supporting change for change's sake, be aware of the need to encourage innovation and seek to constantly review his actions and the actions of his colleagues in the light of change.
c. strive to avoid becoming too comfortable with things as they are and, therefore, blindly oppose actions which would upset the status quo.

II. Knowledge and Understanding

The physician should know

a. methods that he can use to keep abreast of what is going on in his field (see VIB 1a and 1b);
b. the trends in the practice of medicine and be alert to the main issues regarding practice, diagnosis and treatment that are yet to be resolved.

III. Skills

The physician should be skilled at

a. methods of analyzing problems so that he avoids stereotyped responses;
b. communicating with others so that he can evaluate appropriately without stifling creativity and enthusiasm for innovation.

VIB 2. DEMONSTRATING ACCEPTANCE OF THE NECESSITY OF MAINTAINING PROFESSIONAL COMPETENCE BY MAINTAINING AN ATTITUDE OF INQUIRY

SPECIFIC OBJECTIVES OF PEDIATRICS

See note on VIB 1a and also note below.

I. Attitudes

The pediatric clerkship can reinforce these attitudes in reference to particular issues which concern the field of pediatrics, especially, e.g., the new methods of organizing health care delivery to the indigent patients.

II. Knowledge and Understanding

The pediatric clerkship can provide information in regard to the unresolved issues in diseases of childhood.

III. Skills

Opportunities will be made available during the clerkship for practicing these skills in regard to issues in the field of pediatrics.

NOTE: The clinical clerkships offer the opportunity for the student to become acquainted with individuals who are discovering and applying new knowledge in the practice of clinical medicine; the existence of these individuals offers the opportunity to reinforce the attitudes discussed in General Objectives, depending upon the organization of the clerkships.

VIB 3. DEMONSTRATING ACCEPTANCE OF MAINTAINING PROFESSIONAL COMPETENCE BY SHOWING CONCERN FOR UNDERSTANDING THE MECHANISMS OF NORMAL AND ABNORMAL FUNCTIONING

GENERAL OBJECTIVES

I. Attitudes

The physician should be

a. aware that the depth of his understanding of the mechanisms of normal and abnormal functioning has significant correlation with his ability to take care of patients;

b. willing to strive throughout his career as a clinician to deepen his knowledge of function and incorporate new knowledge of function as it becomes available.

II. Knowledge and Understanding

See Categories I through V.

In addition, the physician should possess an understanding of the scientific method. This knowledge will enable him to maintain his insights into the mechanisms of normal and abnormal functioning when the particular details learned in formal instruction have faded from his memory.

III. Skills

The physician should be able to organize the information that he has in regard to the clinical status of his patient in relation to his understanding of the mechanisms of normal and abnormal functioning.

VIB 3. DEMONSTRATING ACCEPTANCE OF MAINTAINING PROFESSIONAL COMPETENCE BY SHOWING CONCERN FOR UNDERSTANDING THE MECHANISMS OF NORMAL AND ABNORMAL FUNCTIONING

SPECIFIC OBJECTIVES OF PEDIATRICS

See note below.

I. Attitudes

The clerkship can provide insight into the mechanisms of physiological and psychosocial functioning in children.

II. Knowledge and Understanding

The clerkship can provide knowledge about the underlying mechanisms in the most common conditions in children.

III. Skills

The clerkship will provide learning experiences which involve analysis of specific cases in pediatric patients which can provide practice in developing these skills.

NOTE: All the clinical clerkships provide an opportunity to develop this concern in the students. Whether or not the students take advantage of this opportunity depends upon the interaction between students and faculty. The emphasis in the clerkships should be on the process of clinical problem solving rather than on answers to specific questions. It is always tempting for the student to attempt to memorize a series of "if then" clauses; that is, if a patient has symptom "a" then the physician should perform action "b" rather than try to understand the underlying physiological and psycho-social mechanisms that account for the symptoms displayed by the patient. The pediatric clerkship can, if properly organized, serve to reinforce the development of the appropriate abilities described in the General Objectives.

VIB 4. DEMONSTRATING ACCEPTANCE OF THE NECESSITY OF MAINTAINING PROFESSIONAL COMPETENCE BY SUPPORTING AND PARTICIPATING IN MEDICAL EDUCATION

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware that

a. he has a responsibility of contributing to the profession of medicine by developing the abilities of students, house staff and colleagues;
b. his participation in teaching not only improves the competencies of others but serves to develop and sharpen his own competencies;
c. he must educate patients as well as health professionals.

II. Knowledge and Understanding

In addition to mastery of the subject which he strives to teach, the physician should have some basic knowledge of educational principles. These include:

a. The fact that education must be tailored to the needs of the learner, not the interests of the teacher.
b. Education should be oriented to specific behavioral changes in the learner.
c. Effective education requires some positive attitudes on the part of the learner, and his actions and manner as an educator can significantly affect the motivation of the learner.
d. Effective learning requires feedback to the learner regarding his strengths and weaknesses in reaching the educational goals and he, as a teacher, has some responsibility for providing this feedback or assisting the learner to obtain feedback himself.

III. Skills

Effective education requires the ability to

a. present information in an organized, consistent fashion;
b. make appropriate use of instructional aids, such as slides, blackboards, films, handouts, etc.;
c. develop evaluation methods that provide appropriate feedback information to the student and to the physician as an educator.

VIB 4. DEMONSTRATING ACCEPTANCE OF THE NECESSITY OF MAINTAINING PROFESSIONAL COMPETENCE BY SUPPORTING AND PARTICIPATING IN MEDICAL EDUCATION

SPECIFIC OBJECTIVES OF PEDIATRICS

See note below.

I. Attitudes

The pediatric clerkship will provide some opportunity for observing clinicians educating families in regard to patient care, and some experience in educating families regarding care of children.

II. Knowledge and Understanding

To the extent that the clerkship uses effective educational principles in organizing instruction, some of these knowledges will be introduced and reinforced in the student. Opportunities for explicit discussion of the principles and concepts could be provided during the clerkship if time were available.

III. Skills

Students may have the opportunity to practice some teaching skills with families. It might also be feasible to instruct fellow students during the course of the clerkship.

NOTE: All of the clinical clerkships provide the students with some realistic models of the role of clinicians in medical education. They also provide him with opportunities to educate patients. To the extent that these models and opportunities are effective, a great many of the abilities listed in the General Objectives will be reinforced.

VIB 5. ACCEPTING THE NECESSITY OF MAINTAINING PROFESSIONAL COMPETENCE BY MAINTAINING PERSONAL MENTAL AND PHYSICAL HEALTH

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware that

a. his own life style can have a significant affect upon his ability to advise patients regarding their personal mental and physical health;
b. impairments of his own personal mental and physical health can interfere with his ability to deliver adequate patient care;
c. he has an obligation to be aware when his abilities are so overtaxed that he is unable to perform adequately and should rest from his patient care responsibilities until they are improved;
d. physicians sometimes fail to give adequate care to fellow physicians and their families because they make unjustified assumptions about the sophistication of physicians and their families regarding their own care so that he must strive to obtain health care for himself and his family which meets optimal standards.

II. Knowledge and Understanding

The physician should know

a. the effects of tension and physical fatigue on his ability to function as a physician;
b. how to maintain his own health (see Category V).

III. Skills

The physician should be able to organize his practice so as not to continually put an undue strain upon his physical and mental health, and that of his family.

VIB 5. ACCEPTING THE NECESSITY OF MAINTAINING PROFESSIONAL COMPETENCE BY MAINTAINING PERSONAL MENTAL AND PHYSICAL HEALTH

SPECIFIC OBJECTIVES OF PEDIATRICS

See note below.

I. Attitudes

The clerkship can give the student specific insights into the emotional problems of physicians which may interfere with his ability to appropriately relate to families.

II. Knowledge and Understanding

Introduction and/or reinforcement.

III. Skills

Since the use of one's time appropriately is one of the skills that is developed through having to deal with responsibility without strong external control, the clerkship offers the opportunity to reinforce the student's skills at organizing his activities if organized to emphasize student self-direction (see VIB Categories).

NOTE: The clinical clerkship experiences are the appropriate media for developing the abilities listed in the General Objectives since they give the student the opportunity to observe clinicians in action. However, this opportunity will be missed unless explicitly dealt with in the clerkships.

VIC. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RECOGNIZING PRIMACY OF PATIENT WELFARE

GENERAL OBJECTIVES

I. Attitudes

The physician should be strongly committed to giving patient welfare prime emphasis in his professional activities. He, therefore, should

a. be willing to heed a call for help;
b. be willing to devote necessary time and effort;
c. demonstrate care in delegating responsibility.

II. Knowledge and Understanding

Mastery of Categories I - V are required so that the physician understands the patient's needs.

III. Skills

The physician must be especially skilled at communication so that he can emphasize the primacy of patient care with tact and discrimination.

VIC. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RECOGNIZING PRIMACY OF PATIENT WELFARE

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Clinical experience can either reinforce or weaken these attitudes depending on the "atmosphere" of the clinical service. Pediatrics, with its emphasis on human development and health maintenance, can provide excellent reinforcement of these attitudes.

II. Knowledge and Understanding

See Categories I - V.

III. Skills

Communication skills especially those in communicating with children and their families are reinforced in the pediatric clerkship.

VID. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RELATING EFFECTIVELY TO PATIENT AND FAMILY

GENERAL OBJECTIVES

I. Attitudes

The physician should

a. be genuinely concerned about the patient as a human being;
b. be willing to allow the physician-patient relationship to mature;
c. strive to avoid needless embarrassment, alarm and discomfort to the patient;
d. strive to facilitate the patient's ability to make choices and avoid the development of undue dependency in the patient towards himself;
e. recognize the particular problems that health professionals and their families have when ill and strive to avoid assuming that these individuals understand all aspects of their illness or have received diagnostic work ups when such may not be the case.

II. Knowledge and Understanding

See Categories I - V.

The physician should also possess knowledge

a. about human reactions to illness, and the effect of ethnic, racial, socio-economic, sex, age and educational differences among patients on their reactions to illness;
b. of the basic principles of communicating with patients;
c. of the hospital milieu and its effect on patients.

III. Skills

He should be skilled at communicating with patients and families.

VID. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RELATING EFFECTIVELY TO PATIENT AND FAMILY

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

The clerkship offers great opportunities for the reinforcement of the appropriate attitudes since there is much contact with patients' families where the emphasis must necessarily be psychological instead of physiological.

II. Knowledge and Understanding

See Categories I - V.

Contact with patients' families should help the student to perceive the varying reactions to illness from patients of different backgrounds.

III. Skills

There is a great deal of opportunity in pediatrics to practice communication skills.

VIE. DEMONSTRATING EFFECTIVENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RELATING EFFECTIVELY TO OTHER MEDICAL PERSONNEL

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware that the effective delivery of patient care requires the collaboration of a number of health personnel. In order to demonstrate this awareness, he should strive to

a. demonstrate mutual respect;
b. maintain open and honest communication;
c. supervise and lead effectively;
d. function effectively as a member of a team.

Also see (e) in the Attitudes Section of VID.

II. Knowledge and Understanding

The physician should have

a. a thorough knowledge of the functions and capabilities of the other health personnel he is associated with;
b. a thorough familiarity with some basic principles of supervision and human relations.

III. Skills

The physician should be skilled at communication with others in serving as a member of a health care team.

VIE. DEMONSTRATING EFFECTIVENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY RELATING EFFECTIVELY TO OTHER MEDICAL PERSONNEL

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Students will be exposed to models of health team functioning in the clerkship. The reinforcement of attitudes can be effective or ineffective depending on the model developed.

II. Knowledge and Understanding

The clerkship will provide exposure to a variety of health personnel, and assist the student in understanding the roles and functions of many of them especially as they relate to care of children.

III. Skills

The pediatric clerkship will require students to function as members of a team and help reinforce these skills especially if they are emphasized by faculty.

VIF. DEMONSTRATING EFFECTIVE AND APPROPRIATE ATTITUDES AS A PHYSICIAN BY DEALING APPROPRIATELY WITH PATIENTS WITH INCURABLE CONDITIONS

GENERAL OBJECTIVES

I. Attitudes

The physician should strive to do his best for each patient regardless of the nature of the patient's condition. For those patients with incurable conditions where his medical skills and techniques cannot prevent death, or produce cure, he should strive

a. to maintain his interest and concern and communicate this interest and concern to the patient;
b. recognize the unique needs of such patients for planning and implementation for patient care;
c. to organize the resources which will ensure these patients have proper care;
d. to attend to preparation of patients and family for death;
e. to be concerned but objective so that he maintains appropriate relationships with the patient, the patient's family and other health professionals at all times.

II. Knowledge and Understanding

See Categories I - V.

The physician must possess knowledge about

a. disease and its consequences to be able to decide that a condition is incurable and to be able to discuss it appropriately with patients and families;
b. the attitudes of patients toward death and the most effective methods of discussing death with patients and families as they relate to the specific needs of patients with varying backgrounds;
c. the attitudes towards death of patients from varying religious backgrounds;
d. the clergy who work in the hospital and be aware of how their expertise can be of assistance to him in dealing appropriately with patients who face death;
e. the stages of human reactions to death.

III. Skills

The physician must be skilled at communicating to patients and their families regarding the course and consequence of incurable conditions.

VI. DEMONSTRATING EFFECTIVE AND APPROPRIATE ATTITUDES AS A PHYSICIAN BY DEALING APPROPRIATELY WITH PATIENTS WITH INCURABLE CONDITIONS

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Students will be exposed to some patients with incurable conditions during the pediatric clerkship. The clerkship should, therefore, provide a valuable opportunity if utilized for student exposure to some of the issues and problems in dealing with patients with incurable conditions.

II. Knowledge and Understanding

The pediatric clerkship should reinforce some of the principles regarding the care of incurable patients as they relate to the illnesses of children who suffer severe retardation or probable certain death, especially valuable information regarding patients with congenital and genetic defects will be provided.

III. Skills

The students will have the opportunity to observe physicians counseling families regarding the incurable conditions of children.

VIG. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY MAINTAINING SENSITIVITY TO MORAL AND ETHICAL ISSUES IN MEDICINE

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware that certain issues involve difficult and complex questions regarding human affairs.

The physician should, therefore,

a. strive to be aware of these issues as they relate to the practice of medicine and the points of view of various contending groups;

b. strive to develop a point of view on ethical issues while maintaining respect for the attitudes of others;

c. be willing to make his convictions known regarding such ethical issues, while at the same time maintaining proper tact and discrimination and respect for others in their ethical attitudes.

II. Knowledge and Understanding

The physician should be knowledgeable about some of the

a. various positions being taken on the chief ethical issues that confront medicine today;

b. history underlying many of the debates regarding many of these ethical issues so that he is better able to put them into the context of present day attitudes.

III. Skills

The physician should be able to communicate with patients and colleagues regarding sensitive ethical issues without making the mistake of

a. either failing to deal with the issue at all or

b. dealing with it in a prejudiced fashion.

VIG. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS HIS ROLE AS A PHYSICIAN BY MAINTAINING SENSITIVITY TO MORAL AND ETHICAL ISSUES IN MEDICINE

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

Some of the basic issues regarding physician responsibility as they relate to treatment of children are faced in pediatrics. These exposures help reinforce appropriate attitudes.

II. Knowledge and Understanding

The student will gain information regarding child care and abuse and children's relationship with community. During the clerkship he also will gain information regarding birth control and other problems involving adolescence.

III. Skills

Students will have an opportunity to discuss child care with families and observe physicians relating to families. Some of these discussions relate to these ethical issues.

VIH. DEMONSTRATING EFFECTIVE AND APPROPRIATE ATTITUDES AS A PHYSICIAN BY MAINTAINING AWARENESS OF NEEDS FOR TRANSPLANTATIONS AND AUTOPSIES

GENERAL OBJECTIVES

I. Attitudes

The physician should be aware that his responsibility goes beyond that of taking care of the individual patient that he has under his specific care, and that he must be willing, therefore, to use his experience with his patients to provide better care for other patients. He should, therefore,

a. be alert to opportunities for transplantation;
b. strive to encourage post-mortem examinations.

II. Knowledge and Understanding

See Categories I - V.

The physician must possess knowledge about the

a. types of patients whose organs would be most readily usable for transplantation purposes;
b. stability of various organs so that proper timing can be followed in organ transplants;
c. methods of organizing and planning hospital procedures for transplants;
d. types of patients most suitable for transplants;
e. types of conditions in which post-mortems are especially needed for adding to medical knowledge;
f. legal and ethical issues involving organ donations and autopsies.

III. Skills

The physician should be skilled at communicating with patients regarding the need for organs for transplantation and post-mortem examinations.

VIH. DEMONSTRATING EFFECTIVE AND APPROPRIATE ATTITUDES AS A PHYSICIAN BY MAINTAINING AWARENESS OF NEEDS FOR TRANSPLANTATIONS AND AUTOPSIES

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes

During the clerkship, the student

a. will have contact with some patients who can be helped by transplantations;
b. will also have the opportunity to relate various pertinent conditions to post-mortem findings.

Hopefully, these experiences will reinforce the desired attitudes.

II. Knowledge and Understanding

During the clerkship, contact with patients suffering from diseases which can be alleviated by transplantation should assist in providing some of the knowledge and understandings described in the General Objectives.

III. Skills

The student will have some opportunities to talk to patients and to observe physicians discussing issues involved in transplantation and autopsies in children.

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VI-I. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS ROLE AS AN EDUCATED PROFESSIONAL BY ACCEPTING RESPONSIBILITY TO PROFESSION AND COMMUNITY

GENERAL OBJECTIVES

I. Attitudes
The physician should be aware that his position as an educated professional requires certain commitments to his professional associations and to the community, especially in regard to his special expertise as a physician.

II. Knowledge and Understanding
The physician should possess knowledge about the
a. organization of his profession in terms of its chief professional associations and the ways in which he can aid and influence his profession;
b. particular community activities which especially require the expertise and advice of physicians.

III. Skills
The physician should be able to communicate knowledgeably and effectively to others regarding his profession and the community.

VI-I. DEMONSTRATING EFFECTIVENESS AND APPROPRIATENESS OF ATTITUDES TOWARDS ROLE AS AN EDUCATED PROFESSIONAL BY ACCEPTING RESPONSIBILITY TO PROFESSION AND COMMUNITY

SPECIFIC OBJECTIVES OF PEDIATRICS

I. Attitudes
The clerkship will provide the student with insight into the consequences of community disorganization by his exposure to cases of child neglect and abuse.

II. Knowledge and Understanding
During the clerkship, the student will be able to observe faculty in activities which should provide some of the information in the General Objectives.

III. Skills
The clerkship will provide opportunities to observe faculty demonstrating these skills and in some cases, especially in regard to communicating with community agencies, they may have the opportunity to practice these skills themselves. Also, opportunities to communicate with patients and families will facilitate the development of these skills.

Question 1:

Does the design of the learning experience facilitate our reaching these objectives?

The core pediatric program and, indeed, all clinical programs, are organized to provide role models for the future physician. Unfortunately, models of office practice of medicine are infrequently available in the clinical core learning experiences. It should be recognized that the process of modeling is a long-term process, and that the contribution of any one relati brief segment in the development of effective models will be limited.

The pediatric clerkship is attempting to develop in the students a desire to learn on their own through the use of self-instructional materials, and the elimination of lectures. There is, however, in the various rounds and other types of interactions regarding patients, a strong tendency to rely upon memory instead of the use of reference sources.

Question 2:

If the design is sound, is it being implemented appropriately and effectively?

The chief block to implementation is the limited time and the varied skills of the faculty and house officers. Furthermore, while the pediatric clerkship may be organized to encourage these objectives, if other parts of the medical school curriculum are not so organized, then there is little that pediatrics can do in the eight weeks it has the students. This is a problem, then, that must be considered by the entire medical school faculty.

Question 3:

What evidence do we have that the program is meeting its objectives?

Certainly, these objectives cannot be evaluated by means of paper and pencil tests. The student feedback data indicate that the students do feel that the pediatric faculty, in general, are concerned about patients and sensitive to their needs. The students do feel, also, that the program is organized to give them the opportunity to study on their own. Furthermore, there is widespread student satisfaction with the self-instructional materials that have been developed.

Question 4:

What changes might be desirable as a result of this analysis?

Even before this analysis was completed, it became obvious to the Department that it was necessary to reorganize its methods of teaching to emphasize the student's responsibility for his own learning. This is now being done with the development of large numbers of self-instructional units. It was also necessary to develop evaluation methods to assess students' ability to relate to patients. This attribute is being taught in the Introduction to Patient Evaluation course, and evaluated in that course, and is also being evaluated in the pediatric house officer examination. It is probable that some of the techniques developed in the Introduction to Patient Evaluation course and the pediatric residency program will be adapted to the education of medical students during the clerkship. This analysis has indicated that the nurses and other allied health personnel are not adequately included as members of a health care team. While this situation can be improved in pediatrics, it is a problem that must be faced by the entire faculty. As was mentioned earlier, it is impossible for one clinical department by itself to develop methods that will have a long-term impact on the attitudes of students. There must be a concerted effort by the entire medical school. There is some evidence that the example of pediatrics and other courses in specifying to the student what he needs to know and leaving it up to the student to learn on his own is having an influence on the entire medical school.

PART III

EFFECTS OF THE DEVELOPMENT OF THE HANDBOOK

Introduction

This section of the handbook will be relatively brief because the effects of the process of developing objectives and systematically analyzing learning experiences and evaluation methods based upon these objectives are just beginning to be felt. Although a number of changes in established procedures have been accomplished, much remains to be done. Furthermore, we have not yet accumulated the data on student performance and attitudes required for a thorough documentation of the influence of this approach on medical education. Below are summarized some of the effects which we believe have resulted from the over two years of continual activity that has gone into the development and implementation of the ideas in the handbook.

SECTION A

EFFECTS ON FACULTY ATTITUDES

Authors of this Handbook

The five co-authors of the handbook have naturally been most influenced by its development. The pediatricians have altered their instructional planning and implementation to focus more clearly on defined goals. The educators involved have gained new appreciations of the difficulties and complexities of clinical instruction in medical education. They also have increased their ability to communicate basic educational principles to faculty.

Influence on Other Pediatric Faculty

The entire Department of Pediatrics has also been strongly influenced by the development of the handbook since they have had to make changes in both instructional and evaluation methods (see below). The Department has had several workshops on evaluation, the development of objectives and the development of instructional materials. Although the time and effort devoted to formal educational planning, development and implementation has caused a heavy work burden on the Department faculty, they have, for the most part, responded effectively.

Influence on Faculty in Other Departments and Other Medical Schools

The ideas tested in pediatrics and embodied in the handbook have been influential on the entire faculty at The University of Texas Medical Branch in a number of subtle ways. Much of this influence has come from the interaction of pediatric faculty with other faculty so that many individuals are more receptive to such ideas as the development of self-instructional packages, the use of student feedback forms, the use of criterion referenced examinations, and the use of examinations to provide feedback to students and evaluate the effectiveness of instruction, as well as to grade students. The model described in the handbook has been used to revise the Occupational Therapy curriculum, and to analyze the curriculum of the Family Practice Residency. The concepts developed in the handbook have been useful in the construction of descriptions of pediatric competence being developed by the American Board of Pediatrics.

The ideas in the handbook have had great influence on the curriculum of the course in Introduction to Patient Evaluation (see below). This course, in turn, has had a great impact on the 56 behavioral scientists and clinicians who teach the course. A similar influence has occurred in the Physician Assistant Program which has used simulated patient examinations to assess the competence of the physician assistant.

Finally, a number of presentations have been made to national groups. These include a Task Force in Interpersonal Skills sponsored by the National Board of Medical Examiners; and workshops on Assessment and Instruction conducted by the American Board of Medical Specialities, the Ambulatory Pediatric Association, the Society of Chairmen in Otolaryngology, the Society of Pediatric Chairmen and the American Academy of Endodontic Dentistry.

SECTION B

EFFECTS ON PEDIATRIC INSTRUCTION

Self-Instructional Materials in Pediatrics

One of the most valuable methods of education which has not yet been used to its maximum potential in clinical clerkship education is self-instruction. The strengths and weaknesses of this technique are discussed in detail in Part I of the handbook, pages 22 through 24. In recent years, particular attention has been paid to self-instructional units or packages, as described by Rita and Stuart Johnson in their book Up the Up Staircase.[6] These packages are based on specific objectives, and contain frequent questions embedded in the text to assist the student to discover whether or not he is learning the material. A short example of a typical self-instructional unit is included as Appendix E in the handbook. The detailed objectives developed by the Department of Pediatrics have facilitated the ability of the Department faculty to convert a large part of the didactic material ordinarily presented in pediatrics to such units. A list of the units already developed is given in

Appendix F. Since these materials can be analyzed and reviewed by faculty and students, and since student's performance on them can be assessed relatively easily (see below), it is hoped that the series can be improved and brought up-to-date periodically. Furthermore, the clear statements of objectives may make it possible to communicate to the basic science faculty some of what clinicians regard as key concepts that should be learned in basic science. The self-instructional units will also permit some extensive changes in the evaluation system (see below).

Changes in Pediatric Seminars

The development of self-instructional units has also changed the nature of departmental seminars. Before the development of the units, faculty often spent student contact time in presenting information. Since the development of the units, many of the faculty now insist that students read the units ahead of time. Students who do not do so are asked to remain silent during the seminar. The seminar discussions then concentrate on case material related to the information presented in the units. Faculty who have conducted seminars in this fashion find a high level of interest and enthusiasm because the students start from a strong information base. A list of departmental seminars is given in Appendix G.

Effects on Rounds and Informal Contacts with Students, House Officers and Faculty

This type of learning experience is most dependent on the personality and attitudes of the faculty and house officers, and is, therefore, hardest to modify. Although it is hard to quantify, the increased educational sophistication of some pediatric faculty has undoubtedly altered their approach to educating students during their clerkship experiences. In most cases, it has resulted in making effective teachers even more effective.

The Department has conducted one-day orientation sessions before each rotation to assist the students to adjust quickly to the service. This has been of some assistance in getting the students started effectively. A copy of the synopsis of the Department's objectives that are presented to the medical students is given as Appendix H.

Changes in the Ambulatory Clinics

A searching review of the ambulatory clinic experience is under way. The Department is exploring the possibility of: 1) improving the record system used in the clinic to maximize the student's understanding of health maintenance; 2) separating the functions of specialty treatment clinics, diagnostic clinics and primary care clinics so that the roles of students, house officers and faculty can be more

clearly defined; and 3) improving the system of evaluation and feedback to the students during their clinic experiences.

SECTION C

EFFECTS ON PEDIATRIC EVALUATION METHODS

Improvement of Multiple Choice Questions

The Department conducted a workshop on the construction of multiple choice questions to improve the utilization of this examination technique. This workshop has greatly improved the pool of questions maintained by the Department.

Criterion-Referenced Examinations

Prior to 1971, the Department had decided on pass-fail grading based upon the distribution of scores from an objective examination. In the last few years, the Department has used the Nedelsky technique[5] which requires the faculty to analyze each question to obtain an absolute pass mark - the faculty decides that a student must obtain a certain percentage of correct answers to obtain a passing grade. This technique has proven quite successful. Students who fail have been required to take a make-up examination.

Written Simulation Exercises

Written simulation exercises on patient management problems[7] are a method of assessing clinical competence, using a hidden answer sheet which provides feedback to the student on the consequences of his clinical diagnostic and therapeutic decisions. The Department has pioneered in using this technique for evaluation at The University of Texas Medical Branch. Although the problems are difficult to construct and score, they evaluate an area of competence not readily assessed by other means.

Changes in Examination and Grading System

The Department is instituting a system of examinations based on the self-instructional units. Two forms of a post-test on each unit will be constructed. Students will be required to pass the examinations on a certain number of units to pass the course. No internal comprehensive examination will be given to students who pass the required number of unit examinations in two attempts. All students will take the National Board Examination in pediatrics. Students who fail to pass the unit examinations will be required to take an internal comprehensive examination.

Pediatric House Officer Examination

All pediatric house officers at Galveston and at an affiliated community hospital are taking yearly oral examinations which measure both problem solving and counseling ability.[8] This examination is described more fully in Appendix H. The techniques used in this examination have influenced the assessment of the abilities of physician assistants. Some of the techniques used can be adapted to the assessment of the abilities of medical students.

Student Feedback Forms

The Department has collected data on student reactions to the clinical clerkship in pediatrics, as is discussed in Part I, page 30. The forms used are included as Appendices C and D. These data have been useful in revising portions of the curriculum.

Pediatric Pretest

Since students enter the pediatric rotations at varied times throughout the year, it was believed that it might be desirable to modify the curriculum later in the year to take advantage of the increased knowledge of the students obtained from other clinical departments. A pretest was prepared, consisting of a typical pediatric comprehensive examination, and administered to each group of students who entered pediatrics. It was discovered that about 40% of the questions in the comprehensive examination were based on material the students had learned prior to the clerkship, 40% were based on material learned primarily in pediatrics and 20% were based on material that could be learned in other clinical departments. It was found that the students' knowledge differed very little from rotation to rotation. These data imply that, on the abilities measured by multiple choice questions of the type used by the Department of Pediatrics, other clinical rotations did not improve the students' performance.[7] Furthermore, it was found that the students who did poorly on basic science at entry to the pediatric course were those most apt to fail the pediatric comprehensive examination. The Department has since developed an extensive pretest examination measuring basic science knowledge needed in pediatrics. Ideally, special remedial work would be scheduled for students who perform poorly on this examination. At present, all that is done is to inform the student that deficiencies in his background may cause him difficulties. The Department is not satisfied with this procedure, but time and resources have not been available to plan specific remedial activities.

Evaluating Clerkship Performance

The Department helped develop and has continued to use a detailed evaluation system for student clinical performance.[10] The form used is Figure 3 on page 28.

SECTION D

EFFECTS ON PREREQUISITE COURSES

The objectives and comments in Part II of the handbook refer to a number of skills in gathering information from children and their families, and counseling families and children regarding medical problems and health maintenance procedures. In order to increase the impact of the brief eight-week clerkship, the Department has been strongly involved in the planning and conduct of two courses - Introduction to Patient Evaluation, which is given in the freshman year, and Introduction to Clinical Medicine, which is given in the sophomore year.

In the Introduction to Patient Evaluation course, the students are given practice in interviewing simulated patients, are videotaped, and receive feedback from two faculty members and nine other students in a small group. The students are also given presentations on topics of basic importance in evaluating patient problems, including information on human growth and development.

In addition to participating in many of the didactic sessions in the Introduction to Clinical Medicine course, the Department is responsible for providing basic information and skills required in examining children for the entire class. Members of the pediatric faculty have developed specific objectives for this portion of the Introduction to Clinical Medicine course (see Appendix I), and have used videotapes as an integral part of the instructional methodology.

Members of the Department of Pediatrics are also active in other preclinical courses, including Biochemistry, Cell Biology, Neurosciences, Endocrinology, Immunology and Microbiology.

CONCLUSION

The activities listed here are only a small part of the impact of the approach of systematically planning clinical instruction based upon clearly defined goals. The goals will probably change as experience accumulates, but the approach described in the handbook will allow for building new activities upon a firm knowledge base.

To the extent that this handbook helps organize the use of inevitably limited resources based upon experience and a clear goal orientation, to that extent we will have achieved our objective in developing it.

APPENDICES

APPENDIX A

OUTLINE OF HISTORY AND PHYSICAL EXAMINATION - INTRODUCTION TO CLINICAL MEDICINE COURSE

INTRODUCTORY DATA

DATE_____ AGE_____ MARITAL STATUS_____

NAME OF PATIENT_____ SEX_____ OCCUPATION_____

INFORMANT_____

Chief Complaint (CC)

Brief statement of difficulty that brought the patient to the physician (in the patient's own words) and the duration of the complaint (there may be more than one complaint).

Present Illness (PI)

This is a chronological prose-style account of the patient's symptoms with dates. Describe the mode of onset, what circumstances, where anatomically, severity, character, number of attacks or frequency, duration and progression, method of relief and exacerbating influences. Include presence or absence of all symptoms related to the organ system involved in the illness, other physician's diagnoses, constitutional symptoms (fever, chills, weight loss, weakness and malaise; the latter is a vague feeling of illness or the "blah's"). Include medications if known. Do NOT use diagnoses unless told to you by the patient (and then so designate) or by another physician.

Review of Systems

Head, eyes, ears, nose, mouth and throat (HEENT)

Head: Headaches

Eyes: Vision, diplopia (double vision), eye pain or discharge (drainage of fluid), glasses, scotomata (spots, flashes or blind spots in visual field.

Ears: Discharge, vertigo (feeling of whirling or spinning), pain, hearing, tinnitus (sensation of ringing or buzzing in the ears).

Nose: Rhinorrhea (nasal discharge), post nasal discharge (nasopharyngeal), epistaxis (nose bleed), stuffiness (congestion), smell.

Throat: Sore throat, hoarseness, speech.

Mouth: Sores, condition of teeth, bleeding, salivation, dentures.

Neck: Enlarged lymph nodes ("glands"), pain, masses, tenderness.

Cardiorespiratory (CR)

Cough, sputum (exudate coughed from the lower respiratory tract), character of sputum, hemoptysis (coughing of blood), wheezing, fever, night sweats, chills, dyspnea (sensation of breathlessness or shortness of breath), orthopnea (dyspnea when assuming supine position), dyspnea with exercies, paroxysmal (periodic) nocturnal dyspnea, chest pain, pleurisy (sharp chest pain on inspiration or coughing), palpitations (conscious awareness of the heart beat), cyanosis (blue mucosa or nails), edema (swelling of hands, feet or face, syncope (fainting).

Gastrointestinal (GI)

Dysphagia (difficulty or painful swallowing or sensation that food lodges in the esophagus), appetite, pyrosis (substernal or epigastric burning; heartburn), abdominal pain, nausea, vomiting, diarrhea, constipation, eructation (belching), food intolerances, hematemesis (vomiting of blood), blood in feces (hematochezia), coffee-ground appearance of vomitus (which is frequently partially digested blood), melena (tarry, black, loose feces), number of stools per day, jaundice, dark urine (bilirubinuria), clay-colored stools (acholic feces), hemorrhoids (dilated perianal veins), rectal pain, tenesmus (painful straining at stool).

Genitourinary (GU)

Urine frequency in day (diuria) and night (nocturia), stranguria (difficulty or straining to start stream), terminal dribbling, forcefulness of stream, incontinence (involuntary loss of urine) and precipitating factors of incontinence, dysuria (painful urination), hematuria (blood in urine), costovertebral angle or flank pain, suprapubic pain, scrotal or labial pain, penile or vaginal discharge, sores.

Menses

Age of onset (menarche), age of menopause (cessation of menses), amount of menstrual bleeding (estimated by number of pads used/day), frequency of periods, duration of periods, intermenstrual bleeding, post-menopausal bleeding, dyspareunia (pelvic pain on sexual intercourse), post-coital bleeding.

Parturition

Gravida (number of pregnancies, whether delivered or not), para (number of vaginal deliveries, abortions (miscarriage or loss of fetus prior to 24 weeks), stillbirths (loss of fetus after 24 weeks), caesarian section (delivery of infant through abdominal incision), number of living children.

Musculoskeletal (MS)

Arthralgia (pain in joints), arthritis (pain and swelling, tenderness and increased heat in joint), back or neck pain, myalgia (pain in muscles), pain in bones.

Neurological (Neuro)

Vertigo, syncope, coma (loss of consciousness for longer than a few minutes), convulsions, paresthesias (sensation of numbness, tingling or prickling), anesthesia (loss of sensation), weakness, fasciculations (fibrillary twitching of muscles), muscle wasting, difficulty walking (gait), loss of coordination.

APPENDIX B

GUIDE FOR PEDIATRIC HISTORY AND PHYSICAL

1. Heading:
   Include name, date, unit history number and date of birth. Should also include the referring physician or agency, address and telephone.

2. The Interview:
   The most important part of patient evaluation is a clear and reliable account of the informant's reasons for seeing the physician and the informant's expectations with regard to medical assistance. This requires a skillful doctor-patient relationship which must be learned through practice. The ultimate effectiveness of your explanations and recommendations is in significant part dependent upon the patient's attitude towards you as well as your professional abilities. The length and depth of the interview will vary with circumstance, and in acutely ill patients the interview may consist of an initial brief session to get enough information to initiate rational treatment.

   In conducting the interview you and the informant should be as comfortable and undisturbed as possible. For all ages, an unhurried, friendly and genuinely interested attitude is a pre-requisite. Pencil and paper tend to inhibit free communication, so don't start writing--just listen. While your ultimate goal is to discover facts, you must also uncover associated feelings and less obvious problems, some of which may be difficult for the informant to relate. The initial part of the interview should be an unstructured, getting acquainted period, and the physician should not be disappointed if relatively little factual material is obtained. In fact, some of the parent attitudes observed may prove more broadly useful than specific answers to direct questions.

   Families and patients react to the physician in many different ways. Some will express hostility which is most often only a mask for the intense fears and anxieties generated by illness and should be met with understanding and patience on the part of the physician. Some are overly cooperative and eagerly provide an essentially positive response to all questions. Others downgrade all symptoms, while still others may edit by addition or subtraction of findings "to help you," the physician. Occasionally an anxious parent exhibits the desire to believe that the physician dealing with their child's life is omnipotent, and is thereby easily steered by the unwary physician into grossly inaccurate responses. These problems can be avoided by using open-ended statements and questions and by being careful not to imply guilt or criticism by the way the question is phrased. In the initial interview the physician should do very little steering except when it becomes apparent that the historian has need for encouragement or guidance. As much as possible, the interview should be communication from the historian to the physician and the physician should be a good listener. Avoid at all costs submitting potential diagnostic explanations and criticisms.

   Interviewing the Parent:
   Interviewing may well begin with the family group so that you may see the interaction of patient and family and sense other areas to be explored; however, in many instances individual sessions are desirable. It is well to let the family know almost from the beginning that this is your plan so that they will not feel compelled to bring out inappropriate material in the presence of the spouse or child.

Interviewing the Child:

Much of what has been said above applies to your interview with the child. It is essential that the physician and his patient establish rapport and the technique for doing this will vary with the age and the subject.

In the very small child (0-3 years) speech is limited and communication effected largely by sounds, movements and facial responses. This age child may tax your observational ingenuity, but the effort is often rewarded with otherwise unrecognized insights.

In the preschool child speech provides a simple, often frank medium of communication once a dialogue is established. For the latter purpose a number of word games or ideas may be useful. For example, the young child may be asked his response if a good fairy gave him three wishes. Two answers may be very traditional, the third often relates a real concern, occasionally a fourth and best of all wish can be awarded. Another is to draw on a sheet of plain white paper single lined faces. One with a happy expression, one appearing angry, and one worried or sad. Just the act of drawing for the child often pleases him, and he is then willing to tell you what the faces are doing, sometimes name them and tell why they are reacting as they appear to. The responses are effective "ice breakers" and can provide you the basis for additional open-ended conversation.

In the school age child the above techniques may be useful, but as the child gets older, you may wish to use more mature questions which develop along the lines of open-ended opportunities for expressing what they like to do or don't like to do. This may involve exploring their normal age related interests, their peer relationships or their long term plans for education or career. Needless to say, a reasonable knowledge of current events of interest to the age group is essential. If the child seems intellectually retarded, questioning at his performance age is more suitable.

3. Chief Complaint:

You are now ready to record the reasons the family has consulted you. These may be single, as in the case of an acute episode, or multiple, but it is often helpful at this point to list these problems and review them with the parent as a basis for your subsequent recording of the present illness. Try not to editorialize.

4. Present Problems:

The story of the chief complaint(s) should now be developed as a putting together in orderly form the material gained in the interview. This may require retracing some steps, re-asking some questions and in-depth exploration of specific areas. The chronology of symptoms is a foundation stone for assembling a meaningful history and, whenever possible, begin the history with the first relevant departure from a state of good health. In developing the present illness resist the temptation to make an early diagnosis and thereby shape the story to fit the textbook history.

It is perfectly permissible and often highly desirable to indicate in the present illness your interpretation of a certain series of events, but if done, this material should be set off in brackets to indicate that this is an editorial addition and may, in fact, be misleading. This is most useful when recording medication received or diagnostic studies done for which the parents' understanding is rather vague.

When a symptom or complaint is mentioned, remember not to abandon it, but to indicate later if it became worse, stayed the same, or resolved.

While dates are useful, a more meaningful story may be assembled if events are related as days prior to admission. Avoid vague time markers such as "Monday" or "last week." If the history just doesn't seem to "make sense" don't edit it into a logical state--one of the best clues to the common problem of accidental poisoning is a history which just doesn't fit!

5. Patient Profile:

Two factors that make the health care of children an interesting specialty in itself are 1) the child does not exist alone; he is a dependent member of a family subject to the stresses, weaknesses and strengths of at least two other persons, and 2) the infant and child is always a changing entity throughout his developmental years. Whereas this is true of adults also, the changes are far more dramatic in the child.

Health, development and social factors are always closely interrelated and consideration must be given to each of these areas both for diagnosis and management of medical conditions. Social stresses may cause illness, may prevent recovery from illnesses with other causes, and may delay development. Developmental delays may be from biological causes and cause severe social stresses. Illness of any type may cause developmental delays on a biological or social basis.

Therefore, this part of the pediatric history is of utmost importance. Because the lay person is often unaware of the above associations, the informant does not always offer this information and at times may be resistant to giving some of these details. Skillful interviewing reduces the resistance and obtains useful data.

The information sought may be divided into two categories: 1) factual and 2) an interpretation of attitudes and feelings of the family members. Both direct and indirect methods can be used to ascertain the data and usually a combination of these two methods is necessary. History of past development and what the child can do is obtained with direct questions. What the child actually does presently may be obtained indirectly. Growth grids and forms such as those used in the Denver Developmental Screening Test or the Gesell Developmental Scales are helpful aids to follow the developmental patterns of a given child.

Development may be divided into:

1) Physical Growth: Heights, weights, head circumferences, osseous changes and teeth eruption.
2) Physical Development: Gross motor, fine motor, vocalization and speech
3) Mental or Intellectual
4) Psycho (emotional)-Social

Growth and Development:

Physical Growth: History taking for physical growth is often inaccurate and grids of previous growth should be obtained. If these are not available, measurements at specific dates should be sought. Baby books kept by parents are most useful for this information. If dates are not known, comparisons to the growth of other siblings or peers have to suffice.

Physical Development: Physical developmental milestones are important throughout childhood and extremely helpful in the first two years of life to identify deviations from normal. Specific gross motor developmental steps should include the age at which the child held head up, turned over, sat alone, crawled, stood alone, walked, rode a tricycle, skipped and rode a bicycle.

History of fine motor steps is more difficult to obtain unless it has been recorded on a scale. Such items as grasping a rattle, picking up a pellet, stacking blocks, using a pencil, coloring and cutting with scissors are examples. These skills can be demonstrated on physical examination.

Language is of such importance to families that parents usually remember the age of first words, sentences, and intelligibility of speech; and these should be recorded. In infants the approximate number of words used by the child is significant.

Psycho-Social Development: The history of psycho-social development is as reliable and important as neuromuscular development. It manifests itself as behavior of the child. Under one year of age two types of social interactions should develop: 1) discriminative smiling, and 2) distress at separation from the mother-figure. Between three weeks and three months the infant occasionally smiles at various non-specific stimuli. Between three months and six months he smiles at the human face or similar object. Discriminative smiling, limited to familiar or well liked faces only, appears between six and seven months. At seven to nine months the infant becomes upset by the approach of a stranger and by 12 to 20 months separation from the mother causes distress.

The child continues to have behavior which is characteristic for specific ages. This is related to the physical growth and development for that age. Such items as bedwetting, temper tantrums, soiling, jealousy, curiosity, impulsivity are psycho-social developmental patterns and should be part of the history. Restlessness, nightmares, fears, enuresis, encopresis, anxiety, bizarre behavior, destructiveness, sex knowledge and activity should be recorded. If present, details of precipitating events, reactions of parents, siblings and peers to the behavior and management of the child should be obtained.

Strengths of the child should also be noted. What are his interests? What can he do well? What does he do that pleases his parents?

One method of obtaining much of the developmental information indirectly is to have the parent describe in detail a typical day of the child. It should include exactly what the child does on his own, the parental reactions, instructions to the child, and feelings, conflicts and attitudes of individuals involved. This method provides a means of evaluating over-protectiveness, rejection, over-indulgence, coerciveness, consistency of patterns and discipline.

As one obtains the facts of development, one should also inquire as to how each person felt about certain steps, behavior, and management by himself or the other parent.

6. Past Medical History:

The past medical history is perhaps the most varied segment. The pertinent content will differ depending upon the age of the subject and nature of the problem to be considered. The suggestions to follow should be used selectively and as a guide.

Pregnancy: Length, health, infections, bleeding, falls, accidents, surgery, drug therapy, diagnostic x-rays. Was pregnancy planned? How did parents feel about it?

Birth: Labor--spontaneous? Induced? Complications? Length of labor, type of presentation, use of forceps, anesthesia. Birth weight and length. Place of birth.

Neonatal: Cyanosis, bleeding, convulsions, jaundice? Rh type of mother and father. Was the cry unusual (shrill, high pitched, weak)? How did the baby look when first observed by a parent?

Feeding: Breast or bottle? Was sucking reflex good? Was feeding a satisfactory experience for both mother and child? Formula and feeding schedule, appetite, diarrhea, vomiting. When were solid foods started? Time of weaning, difficulties encountered. Present diet. Does he eat regularly or between meals?

Diseases: General health. Frequency of colds, sore throats, ear trouble, high fever, convulsions, eye trouble, glasses (where obtained)? Infectious diseases--measles, complications. Sensitivity to drugs? Nature of reaction. Accidents, injuries, poisoning--time, complications.

Hospitalizations: Hospital and dates. Operations--type, date, place, complications. How prepared for surgery psychologically. Reaction to the hospital, to doctor, to operation. In general, how does he react to illness? Ever had x-rays? Type? Therapy?

Immunizations: Date of smallpox, typhoid, pertussis, diphtheria, tetanus and polio. Tetanus or diphtheria antitoxin, evidence of horse serum sensitivity? Schick test, tuberculin test: when and reaction.

Recent Exposure to Contagion: In neighborhood or family? Symptoms suggestive of onset of contagious disease: cough, coryza, rash, fever, vomiting, headache, diarrhea.

7. Family History:

Mother: Age, health, education and occupation. If mother works, or has ever worked, obtain detailed information concerning time, provisions for child's care, and stability of arrangements. Brief appraisal of mother concerning personality, anxiety, affect, hostility, distortions, reliability, and general tone of her relationship with the child (over-protection, rejection, and ambivalence).

Father: Same data as for mother.

Siblings: Include abortions, stillbirths, neonatal deaths, and erythroblastosis fetalis. List in chronological order ages and state of health.

General: Is there a history of tuberculosis, syphilis, allergy, heart disease, kidney disease, mental illness, convulsive disorder, or congenital malformations? What has been the effect of chronic disease on the family in general? Specifically, how has this affected the child? Also inquire about the presence of similar illness in the household, pets or community.

8. Review of Systems:
This is a systematic inventory of potential problems largely done in a question-answer format. The emphasis will vary with the age of the subject and the complaint. It is usually appropriate to indicate to the parent beforehand that this is an inventory and not specifically related to the complaints under consideration. Such an explanation will allay anxiety.

71604

PHYSICAL EXAMINATION

Like the history, the physical examination will vary somewhat with the age of the child. One's approach to the child will also vary with the child's age. Insofar as it does not interfere with a complete examination, the examination should in general be conducted with the patient in the position most suitable to him. Much of the examination, for example, can be conducted with the infant or small child in his mother's lap, a position in which he is most apt to be relaxed and cooperative. The relative importance of certain features of the examination will vary with the specific illness as well as the child's age, but it is important to the examiner that a thorough and complete examination be carried out on each child in order that the examiner may develop his technique and learn normal variations which occur with different aged children.

The physical examination is important not only for the usual reasons, but because it allows one to record at one particular point in time a picture of the physical features of a growing, constantly changing individual. The outline below is given to help one record his findings in an orderly fashion, but does not dictate the sequence of the examination. In general, one delays the more frightening or distasteful procedures, e.g., examination of the eyes, ears, nose, and throat, until the last, particularly in the younger child.

Temperature_____Pulse_____Respiration_____

Height_____Percentile_____Blood Pressure_____

Weight_____Percentile_____Arms: R_____L_____

Head Circumference_____ Percentile _____Legs: R_____L_____

Chest Circumference_____

Blood pressure cuff should be approximately ½ the circumference of the upper arm. An adult size (12 cm. width) cuff is usually appropriate for normal children greater than 8 years of age, a 8-9cm. cuff for children 4-8 years, a 5-6 cm. cuff for 1-4 year olds and a 2.5 cuff for infants.

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Record height, weight, and head circumference on the appropriate growth grid for the child's age and sex as well as in your record of physical examination.

General Appearance: Describe in detail the appearance of the child. Include description of facies, alertness, distress, hostility, fear, cry, body position and/or movements, nutrition and development. Also note interaction between patient and parents.

Skin and Mucous Membranes: Turgor (dry, elastic), texture, color, pigmentation, cyanosis, jaundice, pallor, eruptions? Hair: distribution and color. Nails: cyanosis, pallor, pulsations, pitting, hemorrhages? Lymph nodes: Occipital, post-auricular, cervical, parotid, submaxillary, sublingual, axillary, epitrochlear, inguinal. Size, mobility, tenderness, heat.

Head: Shape, position, sutures, fontanells open or closed (size in centimeters), bulging or depressed? (This is best determined with infant in sitting position). Describe any unusual findings. MacEwen's sign. (Not reliable before sutures are completely closed at about 3 years.)

Ears: Anomaly, position. Discharge (type)? Drums, light reflex, landmarks, bulging, perforation, mobility? Mastoids, nodes, hearing. Vestibular function.

Eyes: Vision (Snellen chart), visual fields, ocular movement. Nystagmus. Eyelids, ptosis. Conjunctivae, pingueculae, pterygium, styes, chalazion, blepharitis. Cornea. Discharge? Pupils, accommodation, iris. Retina, red reflex, fundus, vessels, hemorrhage, chorioretinitis, disc, macula.

Nose: Shape, Alae nasi, flaring? Mucosa, secretions, (serous, purulent). Airway. Septum.

Mouth: Odors, trismus. Lips: cleft, fissures, vesicles, color, edema. Circumoral pallor. Salivation. Teeth: Number, above and below, X/Z cavities, occlusion, formation, color. Gums: Infection, discoloration, bleeding, cysts, thrush. Tongue: coating, moisture, tremor, papillae, color, size.

Throat: Size and appearance of tonsils, exudate or membrane. Cry or voice, describe. Palate: Cleft, perforation, arch. Epiglottis. Uvula, soft palate. Gag reflex.

Neck: Trachea in midline? Anomalies, webbing? Motion, opisthotonus. Brudzinski's sign, tonic neck reflex? Inspect jugular veins for estimated pressure and wave form.

Thorax: Shape, symmetry, retraction.

Lungs: Type and rate of respiration. Because the chest wall is thinner and the muscles smaller, the chest seems more resonant in children than in adults. If one precusses too vigorously, therefore, vibrations over a large area may obscure localized areas of dullness.

Heart: Palpation - point of maximal impulse and right ventricular activity. Determine rate and rhythm, the situation and character of the apical impulse. Presence of a precordial bulge? Heart sounds -- first, second and third (rarely fourth sounds in children). Murmurs: Systolic, holosystolic, or ejection; diastolic, early, mid-diastolic, pre-systolic or atrial; continuous. Pulses: Character, rate, volume and rhythm. Include brachial, femoral, and carotid pulses. Venous hum?

Abdomen: Frequently may be examined first, since it requires few instruments which frighten the child. It is impossible to do a thorough examination if the child is afraid or crying. Sometimes it is necessary to examine parts of the abdomen while the child is quiet and come back to the abdomen again as the child quiets again. Describe contour, usually flat. Scaphoid or distended? Respiration should be largely abdominal. Umbilicus, hernia common up to 2 years. Palpate superficially and deeply. Masses (location, size, shape). Spleen may be palpable 1-2 cm. below left costal margin in first few weeks of life. Liver is generally palpable 1-2 cm. below right costal margin during the first year and frequently during the first 4 years. This is a good area to determine skin turgor. Auscultation and percussion. Fluid: Waves, shifting dullness?

Genitalia: Much can be learned by simple inspection. Prepuce? Size and location of meatal opening. Testes in scrotum? Signs of puberty? Discharge? Vaginal examination is done only with special indications.

Anus and rectum: Sphincter tone. Masses, tenderness, blood on examining finger. Fissures or fistulae?

Spine: Note posture. Kyphosis? Lordosis? (Lumbar dordosis of moderate degree is normal throughout childhood.) Scoliosis? Range of motion.

Extremities and joints: Range of motion, swelling, deformities, symmetry. Gait and stance. Muscle development and strength.

Neuro-muscular: Sensorium. Activity. Coordination.

Fine Motor: Finger to nose: Demonstrate to child by standing opposite and extending arm laterally and flexing elbow to bring tip of index finger gently to tip of nose. First with eyes open, then with eyes closed.

21000

Finger to thumb opposition: Have child touch end of thumb to each finger tip in sequence (one hand at a time) slowly and then quickly. Rapid alternating pronation and supination on lap. Child should be able to do fine motor movements at age of 4 years.

Gross motor skills: Romberg test. Standing on one foot: Have child stand on one foot with eyes open, then close eyes. Stance should be maintained 10-20 seconds at age 6 years. Repeat on other foot. Tandem walking for 6 feet -- first forward, then backward. Have child skip distance of 20 feet. Hop a distance of 10 feet in 6 hops. These latter skills should be developed by age 6. Check muscle tone and reflexes. Sensory status. Cranial nerves.

Developmental and mental evaluation: Much information can be gained by simple observation of the child. E.g., does the three month old reach for your stethoscope? Can the six month old sit alone? In the older child evaluation may be enhanced by use of geometric figures; Goodenough Draw-a-Person, Peabody Picture Vocabulary and reading tests.

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APPENDIX C
DEPARTMENT OF PEDIATRICS - WARD FEEDBACK FORM

	Not Relevant	Poor			Fair			Good			Excellent	
Rate the quality of the core seminars.	X	1	2	3	4	5	6	7	8	9	10	11	12
Did the general organization of the ward segment of the clerkship facilitate your learning?	X	1	2	3	4	5	6	7	8	9	10	11	12
Rate each of the following ward experiences:													
1 Faculty instruction and rounds	X	1	2	3	4	5	6	7	8	9	10	11	12
2 House officer instruction	X	1	2	3	4	5	6	7	8	9	10	11	12
3 X-ray conferences	X	1	2	3	4	5	6	7	8	9	10	11	12
4 Instruction in technical procedures	X	1	2	3	4	5	6	7	8	9	10	11	12

What did you find most valuable: _____

What did you find least valuable: _____

Comments and suggestions for improvement: _____

Please rate each faculty member and house officer with whom you have had contact.

Name _____	Not Relevant	Poor			Fair			Good			Excellent	
1 Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
2 Effectiveness in defining and illustrating clinical signs and symptoms.	X	1	2	3	4	5	6	7	8	9	10	11	12
3 Overall effectiveness of feedback concerning performance.	X	1	2	3	4	5	6	7	8	9	10	11	12
4 Help in developing skill at clinical problem-solving.	X	1	2	3	4	5	6	7	8	9	10	11	12
5 Help in developing skills in communicating case material.	X	1	2	3	4	5	6	7	8	9	10	11	12
6 Approach to patients. (Was his manner one which exemplifies those characteristics you desire in a physician?)	X	1	2	3	4	5	6	7	8	9	10	11	12
7 Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8 Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

Name _____	Not Relevant	Poor			Fair			Good			Excellent	
1 Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
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7 Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8 Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

Name _____

		Not Relevant	Poor			Fair			Good			Excellent		
1	Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
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7	Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8	Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

Name _____

		Not Relevant	Poor			Fair			Good			Excellent		
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6	Approach to patients. (Was his manner one which exemplifies those characteristics you desire in a physician?)	X	1	2	3	4	5	6	7	8	9	10	11	12
7	Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8	Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

DEPARTMENT OF PEDIATRICS - CLINIC FEEDBACK FORM

	Not Relevant	Poor			Fair			Good			Excellent	
Rate the quality of the core seminars.	X	1	2	3	4	5	6	7	8	9	10	11	12
Did the general organization of the clinic segment of the clerkship facilitate your learning?	X	1	2	3	4	5	6	7	8	9	10	11	12
Rate each of the following clinic experiences:													
1 Monday morning conferences	X	1	2	3	4	5	6	7	8	9	10	11	12
2 Faculty instruction	X	1	2	3	4	5	6	7	8	9	10	11	12
3 House officer instruction	X	1	2	3	4	5	6	7	8	9	10	11	12

What did you find most valuable: _____

What did you find least valuable: _____

Comments and suggestions for improvement: _____

Please rate each faculty member and house officer with whom you have had contact.

Name _____	Not Relevant	Poor			Fair			Good			Excellent	
1 Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
2 Effectiveness in defining and illustrating clinical signs and symptoms.	X	1	2	3	4	5	6	7	8	9	10	11	12
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7 Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8 Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

Name _____	Not Relevant	Poor			Fair			Good			Excellent	
1 Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
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7 Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8 Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

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Name _____	Not Relevant	Poor			Fair			Good			Excellent		
1 Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
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Comments: _____

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6 Approach to patients. (Was his manner one which exemplifies those characteristics you desire in a physician?)	X	1	2	3	4	5	6	7	8	9	10	11	12
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1 Effectiveness of help in mastering relevant objectives.	X	1	2	3	4	5	6	7	8	9	10	11	12
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6 Approach to patients. (Was his manner one which exemplifies those characteristics you desire in a physician?)	X	1	2	3	4	5	6	7	8	9	10	11	12
7 Interest in teaching.	X	1	2	3	4	5	6	7	8	9	10	11	12
8 Overall effectiveness.	X	1	2	3	4	5	6	7	8	9	10	11	12

Comments: _____

APPENDIX D

FACULTY AND HOUSE STAFF RATING FORM

Complete this form on as many faculty and house staff members as you became acquainted with by writing the number from the rating scale that best expresses your opinion in the space below the line on which you write their name.

RATING SCALE

Do not care to respond: X

Poor: 1 2 3

Fair: 4 5 6

Good: 7 8 9

Excellent: 10 11 12

	Enter Name:						
1. Effectiveness of daily work rounds (7:30 AM) to plan for patient care.							
2. Delegates to student reasonable level of responsibility for decisions and selection/performance of procedures.							
3. Reads literature and encourages students by example and questions.							
4. Reviews and gives constructive criticism of student's medical record.							
5. Responsive to questions and needs of supervision to make clerkship a good educational experience.							
6. Presents ideas clearly.							
7. Feels he or she is a good physician and would choose as physician for his family.							
8. Overall effectiveness.							
9. Personal comments:							

APPENDIX E

SELF-INSTRUCTIONAL PACKAGE

MALNUTRITION II

Estimated Time 20 Minutes

PEDIATRIC CORE SEMINARS

GEORGE T. BRYAN, M.D.

DEPARTMENT OF PEDIATRICS

1973

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OBESITY

PRE-TEST

True or False

(1) The most common type of malnutrition in the USA is obesity. ____

(2) Obesity in childhood bears little relationship to subsequent obesity in adult life. ____

(3) The fat cells of obese infants are increased in size and number. ____

(4) Simple obesity in children is usually associated with increased height and bone maturation. ____

(5) Food intake is more important than physical activity as a determinant of obesity in children. ____

(6) An appropriate reducing diet is adequate therapy for simple childhood obesity. ____

1096

Answers:

1. T
2. F
3. T
4. T
5. T
6. F

If all your answers to the pre-test are correct, proceed directly to the Post-test, p. 9.

If you missed one or more of the items on the Pre-test, proceed to the next page.

31000

INTRODUCTION

Obesity is the most frequent form of malnutrition in the USA. It is a severe social and physical handicap during childhood, and predisposes (80%) to obesity in later life. Serious consequences of obesity in adults include hypertension, coronary artery disease, diabetes, cholecystitis and a decreased life expectancy. Your learning about the prevention and treatment of childhood obesity in this packet should provide you with an approach to its accurate diagnosis and management as well as the attitudes necessary to do so effectively.

OBJECTIVES

After completing this packet you will be able:

(1) To identify families in which obesity is likely.

(2) To diagnose simple obesity with confidence.

(3) To contrast infantile and later childhood obesity with regard to the size and number of fat cells in the body.

(4) To outline 3 important facets of the treatment of obesity.

Obesity is commonly defined as body weight which is 20-25% greater than the expected weight for height, age and sex. Triceps skin fold thickness may be used as a more accurate indicator of obesity. Girls have triceps skin fold thickness of up to 18 mm; boys up to 25 mm, depending on age.

Which of the following patients are obese?

	Sex	Age	Height	Weight
1.	F	6 mo.	24"	20 lbs.
2.	M	12 mo.	28"	19 lbs.
3.	M	8 yrs.	51"	75 lbs.
4.	F	12 yrs.	62"	100 lbs.

You should have found the six month old girl and the eight year old boy to be obese.
NOTE: Despite all of these measurements, your visual impression of the child is one of the best methods for detecting obesity.

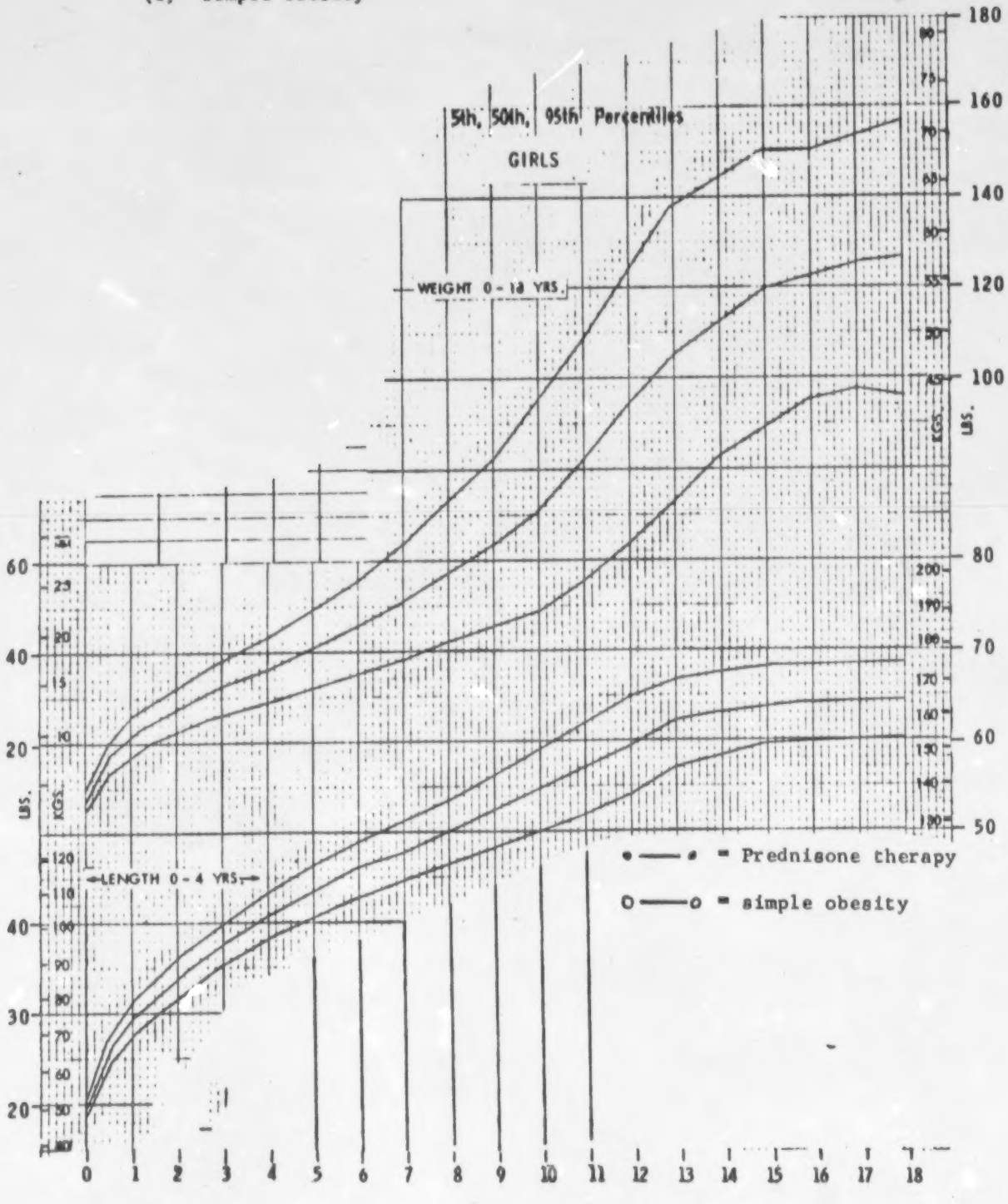
We are frequently concerned about endocrine or hypothalamic lesions as a cause of obesity. This is usually unfounded; these diagnoses are easily excluded if we analyze the whole clinical picture.

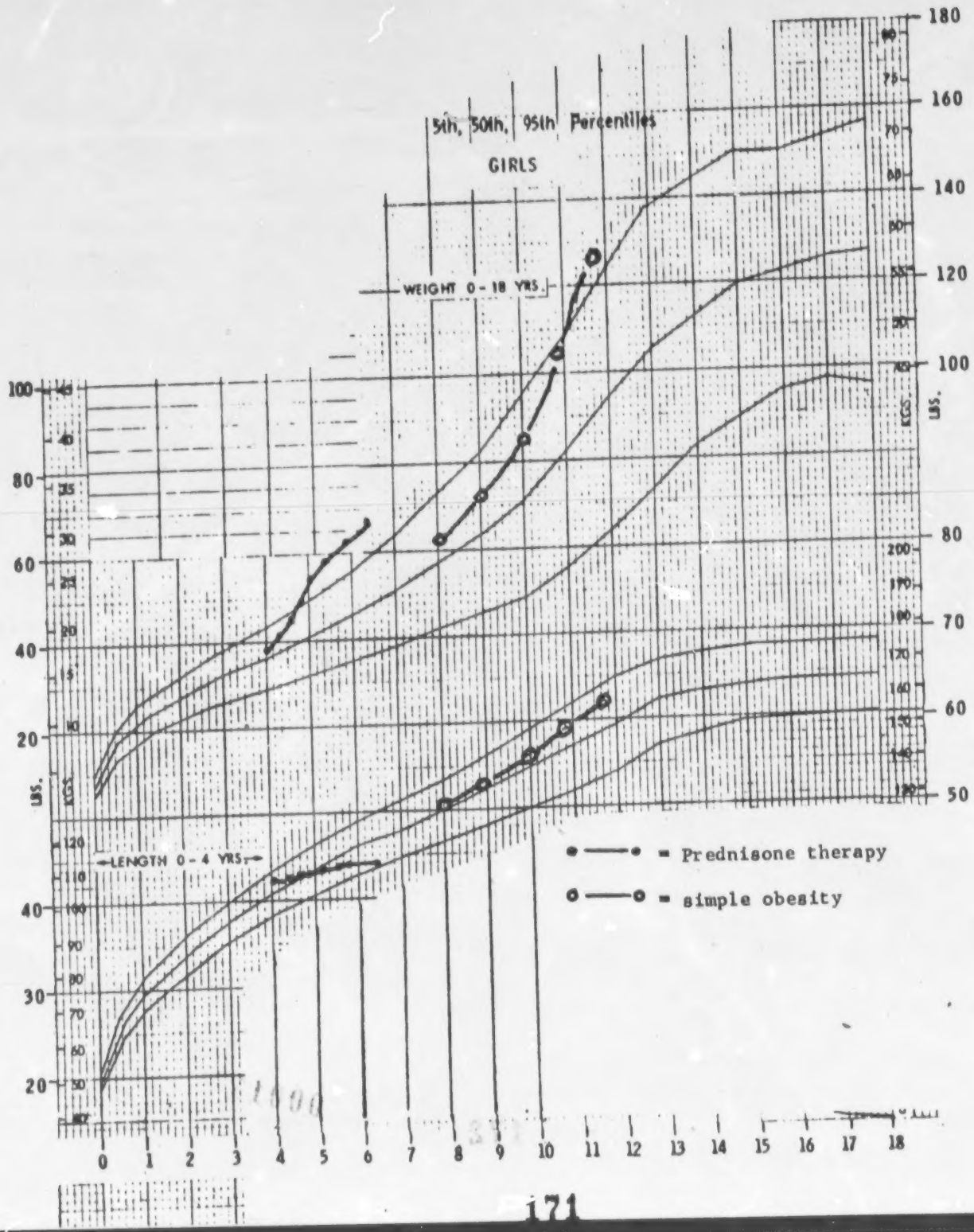
Cause	Height	Other	Test
obesity only	↑	↑ caloric intake	none
hyperadrenocorticism	↓	moon face striae ↑ Bp	cortisol
hypothyroidism	↓	↓ pulse constipation cool skin	Thyroxin
hypothalamic lesion	↑ or ↓	CNS lesion seizures visual fields diabetes insipidus	skull x-ray
glycogenosis	→ or ↓	hepatomegaly	enzyme determination

Draw a typical growth chart (height and weight) for:

(1) hyperadrenocorticism due to daily prednisone administration

(2) simple obesity




5th, 50th, 95th Percentiles
GIRLS
WEIGHT 0 - 18 YRS.
LENGTH 0 - 4 YRS.
LBS.
KGS.
= Prednisone therapy
= simple obesity

Several factors must be considered in determining the etiology of simple obesity, in addition to psychological and social influences.

Genetic or environmental factors: If both parents are normal, < 10% children will be obese; if one parent is obese, 40-50% children will be obese; if both parents are obese, 80% children will be obese. Some studies indicate that twins follow similar weight patterns even when raised apart and that adoptive children tend to follow weight pattern of biologic parents.

Mechanical factors: Obese children are less than half as active as normal children; calories are conserved by obese subject since a sphere has least surface per unit of mass. If subjects are placed in a cold room, a thin subject will increase caloric expenditure by 33%, while a normal subject will increase by 11%, and an obese subject will increase caloric expenditure by only 2%.

Feeding pattern: High ratio of caloric intake to expenditure; characteristic meal pattern of little or no breakfast, light lunch and heavy dinner and afterward; obesity does not occur suddenly; weight reduction is slow because of slow mobilization of fat stores, reduced physical activity and decreased metabolic rate during fasting.

Composition of fat: Human studies demonstrate that in obese infants the number of fat cells is increased, and in infants and older patients the size of fat cells is markedly increased in obesity. These observations suggest that it is possible to increase the chances of adult obesity by over-feeding the young infant.

List 2 factors which will alert you to watch a 5 year old child's rate of weight gain:

_____

_____

List 3 factors in addition to the usual psychological and social problems which make weight reduction difficult in an 11 year old obese girl.

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Children from obese families who are relatively inactive should watched carefully for signs of early obesity. Decreased activity, decased caloric expenditure, and increased numbers of fat cells are some of factors which make weight reduction difficult.

You should be concerned about obese patients because of their increased morbidity and mortality as adults, their feelings of chronic failure, their poor self-image, the discrimination in social opportunities and employment, and the negative attitudes which many health care personnel have toward obese patients. As long as these attitudes persist among health professionals and are inadvertently expressed, it will be difficult to help obese patients.

The treatment of childhood obesity includes a careful evaluation of the patient (history and physical examination is usually enough), encouraging reasonable responsibility and physical activity, eliminating self-criticism and family criticism, respecting your patient, eliminating food stimuli, and establishing reasonable dietary goals.

Your most effective treatment of obesity is its prevention. This can be done by encouraging appropriate food intakes during infancy and by counseling parents not to use food as a vehicle for love or punishment.

Many parents tend to provide food (i.e., bottle of milk) whenever an infant cries. This is soon reflected by an increase in weight at a rapid rate. The physician should recommend other activities or at least a reduction in the total caloric intake so that the infant does not form a large number of fat cells. Parents may use food as a reward or withholding of food (i.e., no dessert) as punishment. This leads to inappropriate emphasis on food and may predispose to psychological and family problems about food.

In simple outline form, demonstrate your understanding of the management of obesity by planning a treatment program for a 14 year old girl who weighs 200 pounds. (Her parents are both moderately obese.)

Your treatment program may be quite varied, depending on the particular situation you have in mind. However, it might include (1) a diet consistent with her family and economic background, (2) some responsibility for tasks in the home, (3) some appropriate exercise, (4) insistence that neither she nor her family continue belittling her, and (5) insistence that unnecessary food stimuli be removed from the home. The program should include early follow-up visits (3-4 weeks). The parents should be encouraged to start a weight reduction program for themselves. Some families may prefer to join a commercial weight reduction program such as "Weight Watchers."

POST-TEST

(1) List a combination of 3 or more historical and/or physical findings which will permit you to diagnose "simple obesity" with confidence in an 8 year old girl.

(2) List 2 attitudes which an attending physician must demonstrate in the treatment of obesity.

(3) a. List 2 endocrinopathies that are frequently blamed for obesity.

b. What single observation during the physical examination will usually rule out these diagnoses?

(4) Outline your advice to the obese parents of a healthy neonate (3 days old) in regard to <u>prevention</u> of obesity in the child.

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ANSWERS TO POST-TEST:

(1) a. weight 20% greater than appropriate for age, sex, height

b. increased triceps skinfold thickness

c. appears obese

d. rate of linear growth above average

e. history of high caloric intake

f. neurological examination normal

(2) a. empathy

b. concern because of social problems when obese

c. concern because of likelihood of adult obesity with attendant problems and mortality

d. accepting of obese patient without belittling him

(3) a. hyperadrenocorticism and hypothyroidism

b. measure length (height) and rate of growth

(4) a. without prevention, 4/5 children will be obese

b. use methods of pacification other than excess feedings

c. change parental feeding habits

d. decrease caloric intake if rate of weight gain increases

If you did not answer all of the questions correctly you should review the pertinent portions of this package. If you have questions please contact Dr. Bryan.

I hope that you will be willing to accept and work with obese children without hostility or sympathy from you, and that you will accept some responsibility for the prevention of obesity by early detection and modification of diet, attitudes and activity.

- The End -

APPENDIX F

LIST OF SELF-INSTRUCTIONAL UNITS DEVELOPED BY THE DEPARTMENT OF PEDIATRICS

	Title	Author
1.	An Approach to the Child with School Refusal or Phobia	Boelsche, ArrNell, M.D.
2.	Malnutrition (III Parts)	Bryan, G. T., M.D.
3.	Adolescence	Bryan, G. T., M.D.
4.	The Burned Child	Carvajal, H. F., M.D.
5.	Problem-Oriented Medical Record	Daeschner, C. W., M.D.
6.	An Approach to the Child with a Chronic Illness	Daeschner, C. W., M.D.
7.	Selection of Fluids and Electrolytes for Treatment of the Dehydrated Child	Daeschner, C. W., M.D.
8.	An Approach to the Handicapped Child	Daniels, D. M., M.D. Rouse, B. M., M.D.
9.	Anticipatory Guidance	Dillard, R. A., M.D.
10.	Management of Acute Asthma in Childhood	Dupree, E., M.D. Goldman, A. S., M.D.
11.	Defects in Host Resistance	Goldman, A. S., M.D. Dupree, E., M.D.
12.	Acute Hypersensitivity Diseases in Children	Goldman, A. S., M.D. Dupree, E., M.D.
13.	Approach to the Child with Anemia	Haggard, M. E., M.D.
14.	An Approach to the Child with a Malignancy	Haggard, M. E., M.D.
15.	An Approach to the Child with Suspected Heart Disease	Harris, L. C., M.D.
16.	Interpreting the EKG	Harris, L. C., M.D.
17.	An Approach to the Child with School Problems	Hebeler, J. R., M.D.
18.	Down's Incidence and Recurrence	ırt, L. L., M.D.

19.	Evaluation of Short Stature	Powell, Gerald F., M.D.
20.	Infant Nutrition	Sayers, S., R.D., M.S.
21.	Evaluation of the Child with Suspected Renal Disease	Travis, L. B., M.D. Lorentz, W. B., M.D. Carvajal, H. F., M.D.
22.	Urinary Tract Infection	Travis, L. B., M.D.

APPENDIX G

LIST OF PEDIATRIC CORE SEMINARS

April 3, 1973 through May 24, 1973

Tuesday, Wednesday, Thursday -- 8:00 - 9:30 A.M.

Room 400, Clinical Science Building

APRIL	3 T		Health Maintenance Conference: Normal Infant and Childhood Nutrition and Feeding	Simon/ Sayers
	4 W		An Approach to Problems of Growth	Powell, C
	5 TH		An Approach to Children with Abnormalities of Nutrition	Bryan
	10 T		Health Maintenance Conference: Anticipatory Guidance	Dillard
	11 W		An Approach to the Child with School Problems	Hebeler
	12 TH	a.	An Approach to the Child with School Refusal	Boelsche
		b.	Health Maintenance Conference: Immunizations	Simon
	17 T	a.	An Approach to the Child with Mental Retardation	Boelsche
		b.	An Approach to the Child with Cerebral Palsy	Daniels
	18 W		An Approach to the Battered, Abused and Neglected Child	Hebeler
	19 TH	a.	An Approach to the Child with a Chronic Illness	Daeschne
		b.	An Approach to the Child who is to be Hospitalized	Daeschne
	24 T	a.	Health Maintenance Conference: Normal Body Fluid Homeostasis	Travis
		b.	An Approach to Child with Acute Dehydration	Travis
	25 W	a.	An Approach to Child with Acute Metabolic Acidosis	Travis
		b.	An Approach to the Child with Metabolic Alkalosis	Travis
	26 TH		An Approach to the Child with Suspected Renal Disease	Travis
MAY	1 T		An Approach to the Child with an Acute Hypersensitivity Disorder	Goldman
	2 W	a.	An Approach to the Child with Fever	Simon
		b.	An Approach to Children with Common Upper Respiratory Disease	Simon
	3 TH	a.	An Approach to Children with Common Lower Respiratory Disease	Dupree
		b.	An Approach to the Child with Chronic Diarrhea	Powell, C
	8 T		An Approach to the Child with Serious Infectious Illnesses such as Septicemia and Meningitis	Box
	9 W		An Approach to the Child with Congenital Heart Disease	Harris
	10 TH	a.	An Approach to the Child with Suspected Heart Disease	Harris
		b.	An Approach to the Child with an Acute Cardiac Emergency	Harris
	15 T	a.	An Approach to the Child with Anemia	Haggard
		b.	An Approach to the Child with a Malignancy	Haggard
	16 W	a.	An Approach to the Child with an Acute Seizure Disorder	Forman
		b.	An Approach to the Child with a Chronic Seizure Disorder	Forman
	17 TH	a.	An Approach to the Child with Suspected CNS Disease	Forman
		b.	OPEN	
	22 T		Poisoning in Children: An Approach to Prevention, Diagnosis and Treatment	Simon/ Matthews
	23 W	a.	The Burned Child	Carvajal
		b.	The Drowned Child	Carvajal
	24 TH		OFF Service Evaluation	Staff

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APPENDIX H

SUMMARY OF OBJECTIVES FOR CORE PEDIATRIC CLERKSHIP

Existing ABILITIES to be Reinforced in Core Pediatrics	TASKS OF PHYSICIAN				
	I	II	III	IV	V
	Information gathering, organizing, recording and monitoring	Defining Patients Diagnosis/Problem	Defining and Implementing Treatment	Health Maintenance	His Role as a Physician and Citizen
Attitudes: Persistence, sensitivity, adaptability, empathic, concerned, objective, self-critical yet self-confident, mature, responsible, ethical - maintain appropriate degree of humility.	I. A. e. g., approach historical data gathering with the right mix of sensitivity and persistence to encourage full and accurate disclosure of facts.				
Knowledge and Understanding: Mechanisms of pathophysiology and psychosocial function. Principles of interviewing and examination of patients, use of laboratory tests, methods, and recording of data - use of community resources, natural history of disease entities, characteristics of treatment methods, effects of drugs on biologic functions, principles of counseling, screening procedures, characteristics of environmental health hazards, normal growth and development, techniques of patient education.		II. B. e. g., awareness of the peculiar findings of certain common environmental poisons, such as, kerosene so as to recognize and manage such children properly.			

	TASKS OF PHYSICIAN				
	I	II	III	IV	V
	Information gathering, organizing, recording and monitoring	Defining Patients Diagnosis/Problem	Defining and Implementing Treatment	Health Maintenance	His Role as a Physician and Citizen

C.

Skills: Establishing rapport and communication with people, examining patients, obtaining laboratory specimens, making records, organization of activities, perform therapeutic procedures, administer drugs and biologicals, interpret data, counsel patients and conduct patient and public education.

IV. C. e.g., know how to counsel a patient about his long term care so tha he understands and follow instructions.

New
ABILITIES to be
Acquired during
Core and other Pediatrics

A.

Attitudes: Application of acquired attitudes in situations relating to infants, children and their families.

B.

Knowledge and Understanding: Normal development and function of infants and children. Differences between the pathophysiology and psychosocial function of infants, children and parents. Specific laboratory tests and norms for infants and children. Records unique to needs of infant and child. Characteristics of diseases common to age group and to families. Community resources avail-

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	TASKS OF PHYSICIAN				
	I	II	III	IV	V
	Information gathering, organizing, recording and monitoring	Defining Patients Diagnosis/Problem	Defining and Implementing Treatment	Health Maintenance	His Role as a Physician and Citizen
able to infants and children. Special problems and type of treatment for infants and children. Health maintenance methods, especially immunizations, environmental hazards, chronic disease and death perception by children and their families.					I. B. e. g. Infant loses water much faster than adult - awareness of this difference permits proper allowances in planning treatment.
					IV. B. e. g., have sufficient knowledge of types, risks and individual needs to carry out an effective immunization program.
Skills: Ability to examine appropriately infant and child and communicate with families. Use of development analysis tests and procedures. How to sedate and restrain infants and children for examination and treatment. How to prepare patients and families for tests, prognosis, complications. Ability to respond to ER situations: 1. Airway obstruction 2. Shock or Sepsis 3. Seizures 4. Cardiac failure or arrhythemia 5. Poisoning or drowning or burns 6. Acute emotional reactions 7. CNS injury or disease 8. Pain 9. Fever					III. c. e.g., know how to prepare an infant for effective rehydration therapy. V. C. e.g., be continuously aware of possibility of emergencies and take self responsibility for presence of material and instruments with which to treat.

APPENDIX I

DESCRIPTION OF PEDIATRIC HOUSE OFFICER EXAMINATION

The Department of Pediatrics at The University of Texas Medical Branch in Galveston, Texas has been experimenting with the assessment of such abilities as complex problem-solving and counseling through the use of oral examinations.

Problem-solving ability is being assessed by the means of two types of exercises - the diagnostic problem and the defense of management. In the first exercise, the examinee is given a brief statement regarding a patient such as "You are asked to go to the emergency room to see a three-month infant suffering from high fever." It is the task of the examinee to elicit information from the examiner regarding the history, physical examination and laboratory findings on the patient and then present his diagnostic impressions. In the second exercise, the examinee reviews the details of a complicated case history and outlines a course of further management of the patient to the examiner, giving his rationale for the decisions he makes.

Counseling ability is assessed by observing the examinee counseling a trained, simulated mother whose child is suffering from some difficult problem such as Down's Syndrome.

The exercises were administered to all the pediatric house officers at The University of Texas Medical Branch and an affiliated community hospital. Analysis of the data indicates:

1) The tests are sufficiently reliable to be used for program assessment and educational feedback to house officers. When combined with faculty impressions summarized from day-to-day contacts with house officers, the orals could assist the faculty in decisions regarding certification.

2) The tests give results which are congruent with other measures of competence such as faculty impressions, in-service examinations and level of training.

3) Counseling ability and problem-solving ability seem to be independent abilities.

For further information on the examination, including examination manuals and sample exercises, contact Mr. Harold G. Levine, Office of Research in Medical Education, The University of Texas Medical Branch, Galveston, Texas 77550.

APPENDIX J

GOALS, PREREQUISITES AND OBJECTIVES
INTRODUCTION TO CLINICAL MEDICINE
DEPARTMENT OF PEDIATRICS

1974

During ICM-II each of you spends one week (4 sessions) with the Department of Pediatrics. This is an opportunity for you to observe and to perform histories and physical examinations on children. The faculty expects you to accomplish each of the specific objectives listed below, and will be happy to assist you in every way possible.

GOALS

Each student should be able (1) to complete a history and physical examination on a newborn, an older infant, a toddler and a pre-school child, (2) to record the resulting data legibly in a logical manner, using appropriate forms and charts, and (3) to identify normal physical and developmental characteristics of children

PREREQUISITES

Each of you have completed your basic science courses You have developed:

1. An awareness of the effect of psychosocial factors on historical data and its collection. Some examples include economics, situational or family stress, illness, language, age, mental ability, and cultural background.

2. The ability to observe nonverbal behaviors and to utilize them in obtaining and interpreting historical data. Examples include posture, movement, tearing, and tremulousness.

3. An awareness of physical, neuromuscular and emotional growth and development as orderly predictable processes.

4. An awareness of your own biases and attitudes in obtaining historical information and performing examinations.

5. An understanding of cardiopulmonary physiology.

6. Knowledge of embryology.

7. Knowledge of adult gross anatomy.

8. An understanding of the anatomical and physiological basis of reflexes and the developmental changes in the nervous system.

9. Knowledge of the function of organs of special sense, particularly sight and hearing.

10. Knowledge of the effect of pharmacological agents on synaptic transmission and hence on neurologic status.

11. A concept of the pathology of most diseases and conditions.

12. An understanding of the relationships between abnormal tissues and abnormal physical signs and symptoms (ICM-I).

OBJECTIVES

At the completion of this week, the student will be able:

1. To complete the history and physical examination portion of the data base for an infant and an older child.

2. To record accurately the height, weight and head circumference on appropriate growth charts.

3. To record the data he obtains on a standardized history and physical examination form with appropriate narrative expansions.

4. To perform the specific items in the physical examinations listed below:

   A. Infants (less than one year old)

      (1) demonstrate appropriate restraining techniques
      (2) length
      (3) weight
      (4) head and chest circumferences
      (5) blood pressure (flush and auscultatory)
      (6) fontanel size
      (7) external auditory canal examination
      (8) heart - point of maximum impulse, rate, presence or absence of murmur, sinus arrhythmia; peripheral pulses
      (9) lungs - breath sounds equal from side to side; differentiate upper and lower airway breath sounds
      (10) abdomen - inspection; palpation of liver and spleen
      (11) genitalia - descended testes; urethral and vaginal orifices; herniae
      (12) hips - possible dislocation
      (13) legs and feet - normal vs. abnormal
      (14) neurological examination including cranial nerves by observation, deep tendon reflexes, developmental level, pincer grasp, muscle tone, Babinski sign, Moro sign, rooting, sucking, grasping, placing, stepping, tonic neck reflex (the last seven items can best be demonstrated in the newborn)

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B. Newborn - same as an infant plus:

(1) sutures (wide versus narrow)
(2) presence of jaundice or cyanosis
(3) abdomen - inspection of umbilical cord, identify arteries and vein on a fresh cord; abdomen round, flat or scaphoid.

C. Child up to 9 years of age:

(1) height
(2) weight
(3) description of tympanic membranes
(4) cervical nodes
(5) heart - sinus arrhythmia, normally split pulmonic second sound

5. The student will:

A. Identify a normal developmental skill at ages 3 and 6 months, 1, 2, 3 and 6 years.

B. Diagram and describe the characteristics of a functional heart murmur in a 6 year old child. List the three normal heart sounds.

C. Describe the flush method and the auscultatory method of obtaining blood pressure in an infant or child.

D. Know the approximate age span during which the following neurological signs are normal: tonic neck, Moro, Babinski and rooting reflexes.

E. Know the average hemoglobin concentration in the newborn, 2 year and 9 year old child.

F. Identify additional historical data which is specific for the pediatric age group.

INSTRUMENTS

Oto-ophthalmoscope, stethoscope (with 10 inch tubing and bell), steel tape measure (centimeters). Scale, height or length board, sphygmomanometer and tongue blades are available on the wards.

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